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# THE GOLD STANDARD [1]

## I

BEFORE the war of 1914–18 the gold standard was among the things taken for granted as an element of Western civilisation. It had served England for nearly a century. The echoes of the bimetallic controversy on the continent of Europe had already died away. It was a controversy that belonged to the nineteenth century. The silver question had ceased to be "spot news" in the newspapers of the United States of America. The spirit of nationalism in currency affairs was on holiday. When, in the last three decades of the nineteenth century, one country after another joined the gold standard group, their action was held to be a sign of progress and they seemed to hold their heads higher than before. They acquired prestige. It was thought that in the Far East the process of industrialisation would be marked—as, indeed, it had already been marked in India and Japan—by a transition from a silver standard to a gold standard adjusted to national conditions.

An unvarying price average was not, however, among the achievements of the gold standard. For roughly two decades before the Franco-Prussian war, the so-called general level of prices had risen under the influence of an increase in the rate of annual supply of gold following upon the Australian and Californian discoveries. The post-war boom, which reached its greatest height in the winter of 1872–73, was followed by a downward trend which, if measured from the top of the boom to the bottom of a depression, continued for approximately twenty-three years. This trend in prices is usually attributed to a fall in the rate of annual supply of gold, but I believe it to have been due, in greater measure, to a rapid increase in the world demand for gold required for monetary purposes. It covered the period during which the gold standard became popular. One after

[1] Presidential Address before Section F of the British Association, Leicester, 1933.

another of the silver and bimetallic countries transferred their allegiance to gold. The United States returned to gold after several years on a paper standard. New territories were exploited, and the respective Governments adopted the gold standard. The world demand for gold reflected the process of transition; it grew far more rapidly than trade and population, and more rapidly than it could be expected to grow under any other conditions or at any time in the future.

By the end of the century practically the whole of the modern industrial world was on the gold standard, and from that time forward the standard was free from the complications and dangers created by the appearance of new disciples. It had become, to all intents and purposes, a world standard. It could be judged on its merits as an international standard. For the time being the countries that had not yet adopted it could be regarded as relatively minor exceptions. The growth in the demand for gold would be expected to keep pace with the growth in population and in trade per head. During the remainder of the period ending in 1914 there was a fall in the relative amount of gold needed as money. Not only was the banknote increasingly employed in ordinary transactions, but in English-speaking and other communities the cheque or its equivalent was growing in popularity. While on the one side the rate of increase in the demand for gold was affected by the cessation of the march of nations towards the gold standard and the growth in the use of substitutes for gold coins, on the other, the rate of annual supply was increased by the development of the South African gold mines. For these reasons the downward trend in prices came to an end about 1895 or 1896 and was replaced by an upward trend which continued until the outbreak of the World War and the suspension of the gold standard.

The rise in prices during this period was not acceptable to everybody. The lag in wages caused serious discontent and probably hastened the growth of national organisations capable of much good but also of serious harm. Forces were being generated which have materially helped to shape economic and social events since the war. But the period of rising prices was also one of rapidly developing trade and relatively high profits. The discontent was that of the employed worker rather than, as at present, of the unemployed worker. The former might complain of inequalities in the distribution of wealth, but he could not complain of the pernicious effects of "deflation." As the gold standard permitted a steady increase in the supply of

money, and a rise in prices, the arguments now frequently employed against the gold standard would have sounded foolish. The standard itself was enjoying a respite from popular criticism. In its broad sense it was accepted on all sides as not merely inevitable but also desirable.

Then came the war, with the usual economic consequences of war. The gold standard was abandoned by nearly every country and currencies were left to the mercy of needy Governments. The inevitable war-time inflation was followed by the customary post-war boom and the process of inflation was carried a stage farther. The subsequent period of depression and falling prices imposed a searching test of economic policy and revealed the degree of exhaustion from which the various countries suffered. Currency instability and trade depression were associated in the minds of people as cause (or part cause) and effect. It was assumed that if and when currency stability was restored the world would have a chance of recovery: without such stability recovery was impossible. It was known, even at that time, that stability was a term that begged most of the questions at issue, but such a detail was of no consequence at a time when people longed for the restoration of pre-war conditions. The world that disappeared in 1914 appeared, in retrospect, something like our picture of Paradise. The financial leaders were strongly supported by public opinion when they pressed for a return to the gold standard.

The world returned to gold. The defeated countries, whose currencies had been destroyed by inflation pursued to its logical end (though not in obedience to logic), created new currencies linked to gold. After "looking the dollar in the face" for a couple of years we restored the gold standard in 1925 at the pre-war rate. In the following year France and Belgium stabilised their currencies in relation to gold and in 1928 restored the gold standard, France fixing her currency at about one-fifth the pre-war gold value. Meanwhile most other countries had joined the gold standard group. Within the space of four years the gold standard had been restored, and it remained in office—though not always in power—until 1931, when it was again destroyed. From 1924 to 1929 most of the currencies of the world were stable, and the economic world made rapid progress, although, for reasons that will presently be noted, Great Britain did not enjoy a reasonable share of that progress.

The depression in trade after 1929 imposed too heavy a strain upon our own country and in 1931 we again suspended specie

payment. Our example was followed at intervals by a large number of other countries, and now the world is divided into two parts, the group of countries that have abandoned the gold standard and those that still, in fact or in theory, have clung to it. When, a few months ago, the United States joined the former, it became evident that the influence of gold was weaker than it had been at any time since the war.

In this country the gold standard had appeared to act as a strait-jacket. The paper pound had been given such a high gold value that our freedom was severely restricted. In spite of pessimistic predictions before the step was taken, the feeling engendered by the suspension of gold in 1931 was one of newly-found freedom. The fall in the external value of our currency actually stimulated trade. We found, however, that we were merely enjoying a larger individual share of a diminishing total. And other countries discovered that they could, with advantage, join in the game of "beggar-my-neighbour," which France had been quietly playing for several years and we had begun to play in boisterous fashion. Then followed the new practice of "competitive depreciation" with the aid of instruments euphemistically called "exchange stabilisation" or "exchange equalisation" funds. Before this new practice spread we were enjoying our new freedom. Gold was a "fair-weather standard," to which we were in no hurry to return. America wanted us to return to gold, but why should we rush into new danger? Disillusionment came when the United States (and therefore Canada) joined in the new game. The most recent experience, with new and strong players, has led us to believe that, after all, the game is not worth the candle, and that what we had termed a strait-jacket was merely that sort of discipline which is a condition of freedom. The gold standard promises once more to become popular.

## II

The brief survey that I have submitted suggests the need for a restatement of monetary theory. In spite of all that has been published in recent years I do not believe that the monetary standard has yet received adequate treatment as a separate problem. In most cases the discussion of the standard has been more or less incidental to the discussion of other problems that either appear more urgent or are regarded as the central theme of the writer. Naturally I do not propose, in this paper, to attempt to fill the gap. But I venture to attempt to place before you

those issues which, in my opinion, can be appreciated by the general public and must be faced if we wish to restore and afterwards maintain the gold standard in this and other countries. Moreover, I shall submit reasons for my belief that we should again seek to establish that standard, and that some modifications recently suggested would tend to weaken rather than enhance its value as an instrument of social progress.

Money is the means by which we secure ownership of things that we desire, or obtain services of various kinds. The amount of money paid for goods and services is the result of bargaining between buyers and sellers, and this result is influenced by certain fundamental considerations. One of these is the connection or sympathy that normally exists between the rates of payment (which I shall call wages) prevailing for personal services. If a coal-miner earned ten times as much as a railway worker everybody would know that there was some highly abnormal influence at work which would ultimately disappear. Relative wages are governed by silent and persistent forces known to every student of elementary economics. They tend to arrange themselves around a mean wage in the manner determined by such forces. In a world of change the dispersion of actual wage rates at any time is never precisely that which the persistent forces tend to produce; nevertheless, the correcting influences are always at work. Again, the "short period," during which deviations from the "normal" distribution about the mean level may continue, tends to grow longer. The mills of competition grind slowly. But they continue to grind. We know that a rise or fall in the wages of one group will not be permanent unless it is followed by a corresponding change in the wages of the other group, or unless there has been a change in the nature of the persistent forces to which I have referred. It is precisely this sympathy in wage movements that gives significance to the conception of an average wage and to movements in that average.

If it be true that the relationship between individual wages is not arbitrary, it is also true that the relationship between individual prices is not arbitrary. In the long run prices are governed by costs, and costs ultimately mean wages. Even economic rent, in the last resort, is a function of the wage average. If prices are governed by costs and costs by wages, and if relative wages obey a law of distribution, it follows that actual prices also tend towards a "normal" arrangement or distribution. If a house of ten rooms could be purchased for the same sum as a hundred tons of coal, everybody would recognise the existence of some abnormal

influence which could not fail, ultimately, to bring a correcting influence into play. A rise or fall in a large group of prices will not be permanent unless either a similar change takes place in the remaining group or a change has occurred in the real costs, and therefore money costs, of supply. It is precisely this sympathy in prices that gives significance to changes in the price average or general level of prices. As in the case of wages so, too, in the case of prices: the "short period," during which deviations from the "normal" distribution may continue, tends to grow longer; but in the long run the effect of the persistent force of competition (broadly interpreted) becomes evident even in a constantly changing world.

These elementary facts seem to me to provide the true foundation of a theory of money. The supply of money needed by a community, and the supply of money that can be absorbed by a community, is a function of the price average. If every pound of wages or of prices were called ten pounds, the community would merely be using ten times as much money as before. Conversely, if the supply of money is fixed, the price average must conform to that supply, and in a state of equilibrium the wage average and the price average will reflect the normal distribution of individual wages and prices. But a change in the supply of money produces intermediate effects before the final state of equilibrium is reached. Nor is it necessary to stress the practical importance of these intermediate effects, which will presently be considered. At the present stage, however, it is desirable to confine our attention to the characteristics of a community in a state of equilibrium in the sense of being free from the intermediate disturbances of a process of change.

I have referred to the existence of a normal distribution of wages and of prices. The statements that I made are applicable to every community in which order is maintained, either through the force of competition or by legal enactment. But the normal relationship of wages or of prices is not the same in all communities: each has its own characteristics. Thus, for example, the relative rates of remuneration of school teachers, coal-miners and railway workers may not be the same, under normal conditions, in Great Britain as in Germany. The normal distribution may vary, within narrow limits, even between different parts of Great Britain. The statement may be extended to include prices. Nevertheless, it is true to say that for each community there exists a normal relationship of wages and of prices towards which actual wages and prices tend. I assume this broad generalisation in all that follows.

My next statement is equally elementary. It is a truism that some commodities and services supply local markets while others supply national or international markets. In the market, whether it be local or world-wide, there is a strong tendency towards a common price. Within this country the price would be quoted in the same money, but in other countries it would be quoted in some other kind of money. If, however, we exported a commodity, we would normally expect to be paid, in foreign money, an amount equivalent to the British money obtainable for it if it were sold at home. The means of payment may be some foreign money—we may, for example, accept payment in marks—but the measure of value is our own money.[1]

For the purpose of simplifying the statement I shall assume commodities (including services) to be divided into two groups, international and domestic, the former comprising those which are commonly exported from one country to another and the latter those which supply local markets. Further, I shall neglect variations in costs of transport. Finally, I shall assume that all communities or countries employ gold as money. It follows that international commodities command the same prices in all countries. British exports are sold at the same prices as German exports or American exports. But we have already seen that the prices of British exports are normally related to the prices of all other things produced and sold in Great Britain. Consequently the price average or general price level in this country will be such as to produce the international prices for international commodities, while the wage average or general level of wages will be such (under a normal distribution of individual wages) as to produce that price average. It does not, however, follow that the wage average in this country must be the same as in other countries. The wage average will be a function of natural conditions, industrial technique and human efficiency; but it must be such as to enable the country to maintain the price average dictated by international conditions.

The same general truth may be expressed in another way. Gold, like other international commodities, is distributed among the markets (countries) of the world in such a way as to command the same value in all. Value in this connection means purchasing power. It follows that in the state of equilibrium represented

[1] It is immaterial that, in this case, we accept the risk of exchange: it would be possible for us to cover that risk, and the cost of covering it would be a prime cost and a component part of the price in pounds. In a state of equilibrium there would be no such risk.

by such a distribution of gold, the exports and imports of a country are balanced.[1] It must be so, for it is evident that if exports do not balance imports there will be a flow of gold from one country to others. This flow will only cease when a true equation has been established.[2]

It will be clear from the statements already made that if all countries employ gold, and only gold, as currency, each must accept the wage and price average or level dictated by the price average of international goods, and that this will be determined by the gold supply in relation to the demand. If the gold supply is $x$ the price average will be half as high as if the supply were $2x$, for in making such a comparison we may assume the rapidity of circulation to be the same in the two cases. Such a currency therefore imposes a discipline upon each country; it must march in step with the others. If one country found a gold mine within its boundaries, issued currency to the amount of the new supply and raised wages and prices to the extent of the new available currency, exports of other commodities would fall and imports increase, with the result that the gold would flow out until a new equilibrium was reached at a correspondingly higher international price average. During the intermediate stages the industries supplying international commodities would be depressed in the country possessing the new gold mine, and correspondingly more active in other countries. This change in the state of trade would be the active force that would restore the new state of equilibrium.

It will also be evident that the same results will follow if, instead of using gold as currency, each country employs paper representing gold, pound for pound, or dollar for dollar, so that any variation in the supply of gold is automatically followed by a variation in the supply of paper currency. Nor is the case altered if gold represents not a hundred per cent. but $x$ per cent. of the paper currency. For it is clear that a given variation in the supply of gold is followed, automatically, by a similar percentage variation in the supply of currency. Moreover, it is obvious that the smaller the percentage gold reserve (that is to say, the greater the economy in the use of gold) the higher the

[1] It should not be forgotten that I am assuming exchange to be confined to commodities, including services. I shall presently refer to movements of capital.

[2] In the complex economic system which I shall consider at a later stage, exchange equilibrium between two or more countries may be defined in either of two ways, namely, a rate of exchange which maintains a balance of payments and a rate which represents equivalence of price levels. These are not necessarily identical. In a changing world they are not even likely to be identical. Failure to distinguish between the two, and to state in which sense equilibrium is being employed, has clouded much recent controversy.

price average of international goods and the wage and price average within each country. But it remains true that each country is subjected to the discipline to which I have referred.

Provided one condition is satisfied, the case is not altered if, instead of merely employing paper currency the supply of which is automatically adjusted to the supply of gold, a country also employs means of payment, such as the cheque, the supply of which may vary independently of the supply of gold. The condition is that the country remains on the gold standard. The gold standard is a legal enactment to the effect that the legal tender of a country shall be convertible on demand into a specified quantity of gold.[1] Its economic significance is that it maintains a fixed rate of exchange.

While a country is on that standard it is forced to adjust its price average, and therefore its wage average, to the international price average. So long as the currency is a stated proportion of the gold supply the currency adjustment to a change in the latter is automatic. But when such currency is supplemented by means of payment the supply of which is not automatically controlled, some other means of adjustment must be found. In modern communities the duty of adjusting the supply of money, in its broad sense, and thereby administering the Gold Standard Act, is entrusted to the Central Bank or some equivalent organisation. The Central Bank is given the right to issue legal tender, and the supply is always—though not necessarily—specified in relation to gold supply.[2] But there is no legal regulation of the use of other means of payment. Control is left in the hands of the Central Bank, and the instrument of control is the rate of discount, supplemented and made effective by open market operations.[3]

[1] In the English Gold Standard Act of 1925 it was provided that legal tender was only convertible into gold provided that the amount to be converted was not worth less, at the defined rate, than 400 ounces of gold; but this provision was merely a safeguard against the use of gold for internal purposes, such as currency. The paper pound was declared to be convertible into gold at the rate of £3 17*s.* 10½*d.* per ounce of standard gold, that is to say, it was worth the gold contained in the pre-war sovereign.

[2] The precise methods differ in different countries. We favour a fixed fiduciary issue; other countries favour a fixed percentage gold reserve. This difference is not fundamental. The former produces less violent reactions and therefore facilitates a steady adjustment. The latter tends to produce unnecessary fluctuations during a process of adjustment to a new state of equilibrium. The English method seems to me better than that employed in the United States.

[3] It is important to stress the fact that the Central Bank is not a free agent. It is entrusted with the duty of maintaining the gold standard, and its action must be guided by the need for fulfilling its obligation under the Act which

By means of the rate of discount, reinforced, when necessary, by open market operations, the bank is able to control the supply of means of payment and thereby to adjust the wage and price average to the international price average. That being so, control by law of the supply of legal tender is not inevitable. It may still be desirable, for it is usual for the discount policy of the bank to be governed by the supply of legal tender held in reserve and this, in turn, is determined by gold movements. Nevertheless, it represents a stage in the evolution of the credit system rather than an integral part of a perfect system. It is even more desirable in other countries than in Great Britain. On the other hand, it is clear that the proportion of gold held against currency may be materially altered without prejudice to the present system. The latter secures an automatic adjustment of the internal price average to the international price average, and this may be done with a 30 per cent. gold reserve as effectively as with a 40 per cent. reserve. A change from the larger to the smaller reserve would permit a substantial rise in the international price level.

The discussion of the gold standard has been based, so far, upon an important assumption, namely, that trade between countries consists of the exchange of commodities, including such services as shipping. I have ignored capital movements and interest payments. On that assumption I have tried to show that, when countries are on the gold standard, their internal wage and price averages must be adjusted to the price average of international goods. In a state of equilibrium trade between the countries will be balanced, that is to say, exports and imports will be equal in total value. Within each country the wage and price averages will represent a normal distribution of particular wages and particular prices. If equilibrium is disturbed, gold movements will follow. In practice the equilibrium between countries will quickly be restored through the adjustment of the internal prices of international goods following depression on the one side or, on the other, greater activity. But the resulting internal disequilibrium is not so quickly removed. Some trades

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defines the standard. Since 1925 the Bank of England has been criticised on numerous occasions for pursuing a discount policy which was regarded as inimical to industrial progress. I do not suggest that the policy of the Bank has always been above reproach. I do not, indeed, believe that academic economists usually possess sufficient information to justify comment upon current policy. It is clear, however, that much of the popular criticism of the Bank has been due to failure to distinguish between the necessities imposed by the Act of 1925 and the policy of the Bank in circumstances that allowed freedom of choice.

are affected more quickly and seriously than others; some are sheltered, others unsheltered. Wage rates in the latter fall out of line with wage rates in the former. So long as this adjustment is delayed the intermediate effects will continue. But in the long run the condition of domestic disequilibrium will be changed and a new position of stable equilibrium be reached, both within the country and between different countries.

In the next stage of the discussion it is necessary to consider the effects of capital movements. One of the commodities entering into the final price average is capital, which, for my present purpose, I shall divide into investment capital and liquid capital. It is well known that the price of capital is higher in new countries than in countries which, in the industrial sense, have reached maturity, and that the difference is greater than the measure of relative risk. Hence we find a movement of capital from older to younger countries, enabling the latter to develop more rapidly than they would be able to do without such assistance. Investment is an import (of bonds) which must be offset by an equivalent export of commodities. Other things being equal an investing country therefore enjoys an excess of current exports of commodities (including current services) over imports. We need not pause to consider whether foreign investment or the excess of exports is the cause, or which came first. It is sufficient to point out that, in a position of equilibrium, the price average within a country must again be such as to make the price average of exports equal to the international price average and that, for commodities (including current services), the average will be lower than it would be if capital were not being exported. But in due course the lending country receives interest, and the amount of interest increases annually. This inflow of interest neutralises a corresponding outward flow of capital. By 1914 the interest receipts of Great Britain were apparently less than the amount of capital annually added to our foreign investments. Our exports of commodities (including current services) appeared to be less than our imports of the same kind. We were reinvesting abroad nearly the whole of the interest upon accumulated investments, but apparently we already needed a small proportion of such interest to pay for current imports. A debtor state which had ceased to borrow also possessed a surplus of commodity exports, the surplus being needed to pay the interest on accumulated debt. Such was the position of the United States of America before the outbreak of the World War.

The growth of long-term investment was normally so slow and

regular that it did not destroy the internal equilibrium of the investing country. For short periods it might invest more or less than the commodity surplus representing the sum available for investment. But in such cases the balance of payments was maintained by the transfer of liquid capital. The investment operation was supplemented by a credit operation. Similarly, if for any other reason there was a temporary excess of imports or exports the surplus or deficit was removed by a movement of liquid capital.

It is here that we find the essential difference between investment capital and liquid capital. Investment might well be termed an industry resembling coal-mining or cotton manufacture. It possessed (if we ignore cyclical fluctuations) a fairly constant market outside the country and had been built up slowly upon the assumption that the market was comparatively safe and likely to grow. Other industries, supplying the commodities representing the export surplus available for investment, had also grown up alongside the investment industry, their growth being based upon the assumption of continuity in the growth of investment. In short, investment was an integral part of the industrial structure and an influence determining the remaining permanent features of the latter. It was not an accident of growth or an occasional visitor. Continuity was of its essence, and if all foreign markets for British capital had suddenly disappeared, industry would have been reduced, for a time, to a state of chaos. Liquid capital, on the other hand, was employed, in different places and at different times, as an equalising factor. Its purpose was to restore or maintain temporary equilibrium when equilibrium had already been destroyed or threatened; to ease the restoration of true or stable equilibrium by reducing the intermediate effects of a process of change or the effects of some temporary disturbing factor. I shall endeavour to show that some of our most serious difficulties since the war have been due to the fact that the distinction between investment capital and liquid capital has lost much of its pre-war significance.

## III

The conditions that I have described in the second section seem to me an essential part of a secure foundation for the working of the gold standard. But they do not indicate all the conditions that must be satisfied. In order that this may be made clear it may be desirable to indicate very briefly the features of the

pre-war gold standard and the essential differences between the working of the pre-war standard and the working of the standard since the war came to an end.[1]

The pre-war standard was of slow growth and became the foundation of a financial system of a highly complex character regarded from the point of view both of structure and of function. The standard was adopted by one country after another under conditions favourable to its operation; it represented a choice between three or more alternatives, and its adoption was regarded as a real advance. The first important point that I would emphasise is that the industrial structure had been adapted to the requirements of the standard. The normal level of wages, costs and prices was adapted to the rate of exchange and consequently to the international level of prices. The currency was neither over-valued nor under-valued, but neutral. The theory of comparative costs afforded a real explanation of the distribution of industry and trade between nations. Changes in the distribution of trade were slow and continuous and were due either to changes in the relationships of real costs of production or to changes in tariff policies. It is, of course, true that changes occurred in the relation of the gold supply to the world demand for gold and therefore in the international price level, but these were so slow as to present no serious obstacle to the adjustment of wages and costs in individual countries. In this connection it should be observed that gold was allowed to move freely from one country to another in response to economic influences and that movement was only due to such influences.

In the second place, the savings of the people were invested in long-term securities. A comparatively small amount was added every year to the fund of liquid capital employed in financing trade; but this fund was determined by trade requirements and by the opportunities for long-term investment rather than by the willingness or unwillingness of their owners to invest.

In the third place, the long-term investments of lending countries, such as Great Britain, Germany and France, were appropriate to the industrial structures of both lending and borrowing countries. Thus, for example, the industrial structure of Great Britain and the annual overseas investments of Great Britain formed pieces which fitted together to form part of the economic mosaic.

[1] I discussed these in greater detail in a course of four lectures delivered shortly before Christmas to the London Institute of Bankers and published in the *Journal* of that Institute.

In the fourth place, although most of the countries of the world were living under protective systems, and of systems of greater or less protection, tariffs were not employed to correct temporary failures to balance international payments during periods of depression. Protection represented a choice of alternatives and in each case the system was carefully thought out and determined by long-term considerations. For a relatively long period of years a protective system could be regarded as a constant; international trade adapted itself to that system and for this reason the system did not seriously prejudice the operation of the gold standard. This statement does not constitute a defence of protection.

Finally, the credit system of the world was not only firmly organised, but organised in such a way as to facilitate the working of the gold standard. The Bank of England acted not only as the Central Bank of Great Britain, but also as a sort of International Bank of Economic Settlements. In time of need it was able to draw funds from other countries and to employ those funds at the place of need and in the manner dictated by that need. One of the outstanding features of the system was that, when any country was in distress, the Bank of England was able and ready to mobilise the reserves of the world and to rush to the rescue of that country. Credit or liquid capital was thus a balancing influence rather than an influence employed to destroy an existing state of equilibrium. If actual gold was needed it was forthcoming, as in the case of the United States of America during the crisis of 1907; if a short-term loan was needed, gold was not unnecessarily moved from one country to another; gold movements merely supplemented credit operations. Gold was not an alternative to a short loan, neither was it moved about in such a way as to necessitate a counteracting short loan operation. Both credit and gold movements were correcting rather than disturbing influences; they restored rather than destroyed equilibrium. The Bank of England adopted a more or less neutral attitude in the sense that it performed the essential functions of an International Bank and regarded the problem of monetary stability as an international problem. I do not, of course, suggest that its attitude was altruistic and that Great Britain voluntarily adopted such an attitude merely in the interests of world stability and progress. Such was not the case. The economic structure of Great Britain and the position that she held as the largest investing country and the centre of world finance made her individual interests identical with the interests

of the world as a whole. There was no conflict, or presumed conflict, between the one and the many.

## IV

In all these respects the post-war world has differed from the pre-war world. Moreover, it seems to me that it is in precisely these differences that we find the real explanation of the failure of the gold standard, and that, before we can hope to establish any international standard that will stand the test of time, it will be necessary to restore those conditions which made the pre-war gold standard not merely workable but also highly successful.

In the first place, the post-war gold standard was not of slow growth. Most of the countries that had abandoned gold under the pressure of war rushed back within the short space of about four years, and without considering with sufficient care the changes that had occurred in the underlying economic conditions. The result was that in some cases the rates of exchange were fixed too high and in other cases too low. I may refer briefly to the two outstanding examples—Great Britain and France. In 1925 we returned to the gold standard, and in doing so gave the pound the same gold value as it possessed before the war, that is to say, we restored the pre-war dollar rate of four dollars eighty-six cents to the pound. It was felt by many critics that such a value was too high in relation to the relative wholesale price levels of Great Britain and the United States of America. For several months before we returned to gold the dollar value of sterling had been rising, as the result of a transfer of funds to this country, without any change in the underlying economic conditions. Our price level, it was said, was appropriate to the dollar rate that prevailed before such transfer took place, so that in restoring gold at the pre-war parity the Government over-valued our currency, the extent of over-valuation being estimated roughly at 10 per cent. It was therefore necessary to reduce our price level by 10 per cent. in order to be able to supply international goods at the international price level.

It seems to me that that criticism was inadequate. After the boom of 1920 we suffered a period of severe depression, during which wage rates in the industries supplying international goods (that is to say, the unsheltered industries) were reduced to an extent far exceeding the reductions that were made in the rates of wages prevailing in sheltered industries. In spite of these

reductions the return upon capital invested in the unsheltered industries fell below the normal rate obtainable in the sheltered industries. Thus we were already suffering from an internal industrial disequilibrium; the normal distribution of particular wages to which I referred in the second section had been seriously disturbed. Although the wholesale price level for international goods was made, say, 10 per cent. too high by the return to gold, it represented a price level based upon an unduly low wage average in the industries concerned and an unduly low average return upon the capital invested in such industries. For that reason I believe that the degree of over-valuation was seriously underestimated by the majority of those who objected to the conditions under which we returned to the gold standard. The new standard imposed two tasks upon this country, the first being to reduce by 10 per cent. the price average or price level of the products of the unsheltered industries, the second being to make this new level represent a normal distribution of wages, costs, prices and profits throughout the whole of British industry. Even if there had been no other factor in the situation it is clear that an almost impossible task had been imposed upon the nation. But a further difficulty arose, after 1925, in consequence of a fairly steady fall in the world price level itself. In spite of the reductions in wage rates in the years that followed the return to gold, I do not believe that we succeeded in doing more than keep pace with the world price level. We had failed in the double task that had been set by the restoration of the gold standard.

The over-valuation of the pound inevitably produced a depressing effect upon British industry. It acted as a veiled tax upon exports and a veiled bounty upon imports, with the result that our export surplus was considerably less than would otherwise have been the case. At the same time the world was in need of capital and the tradition of London as a centre of foreign investment led to an attempt to meet this world demand. British capital was invested abroad to an extent exceeding the available export surplus, but this result was hidden by the fact that during the same period other countries sent their liquid capital to London in search of security. I shall return to that point presently; at the present stage I wish to stress the fact that, if such funds had not been imported to this country, the underlying weakness of our position would have been revealed earlier. It would have been necessary to maintain even higher discount rates than those which prevailed and to pursue a policy of more severe deflation. The depression in trade would have been even

greater than actually proved to be the case. This danger was averted by the importation of funds from other countries, although such importation created a danger of another character which will be presently considered.

The case of France differed materially from our own case. When, after a period during which the value of the franc was stabilised, the French Government restored the gold standard, the franc was given a value of approximately one-fifth the pre-war value in terms of gold. But the wage, cost and price levels in that country were such as to suggest a value far higher than that actually given to the franc. The result was that while in Great Britain the gold wage level was about 75 per cent. above the pre-war level, in France it was even below the pre-war level, and even at the present time seems to be little if any above the pre-war level. It is precisely for this reason that the French at the present time are able to contemplate with equanimity the prospect of a return to prosperity without any rise in the price level of that country. Further, the under-valuation of the French franc acted as a veiled bounty upon all exports and a veiled tax upon all imports. The temporary effect was to increase the export surplus (which was further increased by the receipt of Reparation payments from Germany) and to enable the French to amass balances which were left within call in other countries. The funds that accumulated in this country were largely French funds.

In the second place, as we have already seen, a large proportion of the savings of the people of different countries, instead of being invested in long-term securities, were held within call. Thus a vast amount of capital (estimated at two thousand million pounds), which should, and normally would, have been invested in industrial and other long-term securities, was held in liquid form and was moved about in search of security—security which included rapid realisability and was of more importance than a substantial difference in the rate of interest. That confidence which is generated by peace and normal economic development was lacking; the risk factor was over-valued. One result was that industries became heavily burdened with fixed-interest and short-term debts. In this connection it is important for the future to observe that the distinction between investment capital and what I have called liquid capital has lost much of its importance. The war has resulted in a large increase in securities (mainly issued by governments) which can be realised upon an international market with very little delay. These securities are

now held to a greater extent than in the past by people who wish to retain their capital within call. They are therefore far more susceptible to sudden changes in demand and immediately available supply, and their existence on such a large scale has added to the instability of the post-war economic world.

In the third place, a change of the first importance has taken place in the financial relationships of nations without a corresponding change in their industrial structures. The United States of America provides the outstanding but by no means the only example of such change. Immediately before the war that country, although a heavy debtor, had ceased or almost ceased to be, on balance, a borrower. Her industrial structure was appropriate to that state of affairs. She possessed a large export surplus representing interest upon, and to some extent the repayment of, the accumulated loans of the past. The war enabled her not merely to pay off her debts but also to become an important creditor state. Her industrial structure remained practically the same as before; the interest element was transferred from one side to the other side of her account with the rest of the world. Not only did she possess an export surplus in respect of commodities and personal services but that surplus was now augmented (where once it was offset) by interest payments. She was like Mr. Manhattan of comic-opera fame, "all dressed up and no place to go." One factor in the situation is the amount owing to America in respect of so-called war debts, but from her point of view it is not an important factor. The much-discussed transfer problem is as relevant to and important for America in the case of other forms of indebtedness as in that of the debts of other governments. What is peculiar to the so-called war debts is the fact that they represent a contract between two governments, but this is of no international economic significance.

The failure to fit the industrial structure of the world to the new financial relationships between nations constituted one of the real difficulties in operating the post-war standard. I have already referred to the fact that, before the war, gold moved from one country to another in response to economic influences and that such movement produced its effect upon monetary policy and relative price levels. Since the war the changed financial relationships have caused not merely a large-scale movement of gold but also a concentration of gold in those countries in which the change in financial relationships, with the given industrial structure, had not been fully offset by a policy

of foreign investment. Thus France and America have jointly amassed a large proportion of the total world supply. But they have not allowed that supply to produce its pre-war effects. About ten years ago Mr. McKenna rightly pointed out that America was on a dollar standard, not the gold standard. It is, I believe, literally true to say that at no time since 1920 has the United States been on the gold standard in the full technical sense of the words. It is equally true to say that France, while legally on the gold standard since 1928, has never accepted the implications of that standard. The reason for the failure of these two countries to employ the gold standard in the full sense of the words is to be found in their unwillingness either to adapt their industrial structures to the new financial relationship or to embark upon such a policy of foreign investment as would enable them to maintain the existing industrial structure.

Again, the credit system of the world has been completely disorganised. The change in the relative financial strengths of Great Britain, America and other countries has tended to reduce the pre-eminence of London as the financial centre of the world; the power of the City has been challenged by New York and Paris. But that is not the only change that has occurred. I have already referred to the existence of a large mass of liquid capital that would normally have been absorbed by industry in the form of long-term investments. This liquid capital has not been employed by the Central Banks as a stabilising factor; on the contrary, it has proved to be a disturbing factor. Before the war the Bank of England, as the centre or controller of international credit, employed such credit in the service of distressed countries and thereby maintained financial stability. Since the war it has not been able to perform this function with the same effect, while other countries that were able to render assistance could not be relied upon. When the credit of any country was threatened, foreigners withdrew their funds in search of security. When, in 1931, we needed the type of assistance that we were accustomed to render to other countries, the latter deserted us like rats deserting a sinking ship. A large mass of liquid capital moved about the world leaving crisis in its train and creating embarrassment to the countries that it sought, always hunting for security without ever being sure of finding it. The most recent victim of the damage wrought by this movement is the United States of America.

## V

In the fourth section of my paper I have tried to indicate those differences between the pre-war and the post-war gold standards which accounted for the success of the former and the failure of the latter. The question arises whether, under present conditions, it is worth while either to restore the gold standard or to establish any other form of international metallic standard. It is known to all economists that the difficulties of working the post-war gold standard were increased by technical defects in banking organisation, particularly in the United States of America and in France. A discussion of these defects would not be possible in this paper; I refer to them merely to indicate that I am aware of their existence. But I believe, and I therefore assume, that if the more fundamental difficulties to which I have referred were overcome it would be possible to solve purely technical problems.

The essential feature of the gold standard is that it maintains a fixed rate of exchange, establishes an international price system in the sense of a common measure of value, and controls the internal or domestic supply of currency and therefore the domestic level of prices. It seems to me that if we are to return to the gold standard it must be a standard that retains this feature. Before the war a movement of gold from one country to another automatically reacted upon the relative supplies of money in the countries affected. It has been suggested by the Gold Delegation appointed by the Economic Section of the League of Nations that in future the various countries should maintain free reserves of gold. The gold supply of a country should be divided into two parts, the first being the legal reserve against currency, the second being the surplus available for export. The purpose of the scheme is to secure that an export of gold from or an import of gold into the reserve should not react upon the currency policy of the country concerned.

It seems to me that this proposal would destroy the vital element in the gold standard. In recent years we have seen how free reserves are actually employed in practice. In America they were placed on the most inaccessible shelves of the vaults of the Central Banks. In many of the smaller countries they were virtually added to the legal reserves. They were exported with extreme reluctance and the loss of gold even from those reserves reacted upon the discount and currency policies of the losers. Further, it is clear that if all countries maintained free reserves, a considerable proportion of the total reserve of gold in the world

would be rendered ineffective as a foundation for currency, with the result that the gold price level would be lower than under the alternative system. But the real argument against the proposed system is that a movement of gold would not be producing the effect upon internal policy that such a movement ought to produce under normal conditions. At best we should be using the cumbrous method of moving actual gold instead of the pre-war method of moving liquid capital or providing credit; at the worst it would delay a domestic adjustment so long as to make such adjustment greater and more difficult and thus endanger the standard itself. For these reasons it seems to me that the proposal does not constitute an improvement upon the pre-war gold standard. The same reasons lead me to believe that the suggested compromise of establishing and maintaining a wide margin between the buying and selling prices of gold would destroy what is most valuable in the gold standard.

If we ignore other metallic systems it seems to me that the real issue lies between the gold standard, rigorously interpreted, and the maintenance of national currencies which are not linked together by being linked to gold or to any other common measure. When we abandoned the gold standard the alternative achieved considerable popularity in this country, but all recent experience has shown that, during a period of currency disturbance, it tends to increase rather than reduce our difficulties. My objection to the system, however, is due not to the fact that it has created or intensified difficulties under present conditions, but to the fact that it would create difficulties of the present type even though it were introduced under the best possible conditions. The system has been advocated on the ground that it would enable us or any other nation to pursue a currency policy that would maintain a stable price level. For reasons which I cannot give in this paper I believe that precisely that sort of stability which they seek is more likely to be achieved under the gold standard than under a system in which such stability is the immediate object of national policy. But it seems to me that a wider and deeper issue than even price stability is involved in the discussion of the two alternative monetary systems. The national currency system is but one aspect of economic nationalism or economic isolation, of which tariffs is another. A national system of currency is intelligible if not defensible for a nation which isolates itself from the family of nations. It is not, however, consistent with a policy of internationalism in other departments of economic activity. The gold standard stands for internationalism in

economic affairs; it is a condition of free development of trade between nations. Nor should it be forgotten that, if most countries were on the gold standard, secular changes in the value of gold would be relatively small. Post-war changes in the value of gold have been due not to the gold standard but to the failure of a number of countries to operate that standard.

Without pausing to consider the case for bimetallism, I venture to express the belief that the restoration of the gold standard is necessary to the progress of the world in that future which is worth considering. I am content to leave the twenty-first century to our great-grandchildren. I do not, however, suggest that the gold standard should be immediately restored; on the contrary, I fear that political considerations will drive us back to that standard before the essential preliminaries have been properly considered. In the first place, it would be folly on our part to return to gold until we knew precisely the rate of exchange that would enable international trade to be distributed in the manner determined by real costs of production. The new rates should be determined by purchasing power parities. We are not yet agreed, however, upon the precise meaning of purchasing power parity, neither do we possess the information that would enable us to estimate purchasing power parity, howsoever defined. Again, we should not return to gold until the price averages of different countries, expressed in their respective currencies, have reached those heights which are regarded as satisfactory; for it is clear that subsequent changes must be international rather than purely domestic in character. Further, we should not restore the gold standard until individual countries are prepared to pursue investment policies that are appropriate to the remaining parts of their economic structures. It is too much to hope that the great mass of liquid capital which now readily—too readily —flows from one country to another will quickly be invested in long-term securities and thereby cease to be a danger to the financial stability of a number of countries, but it should be easy to form an international exchange stabilisation fund under the control of an appropriate body which, in effect, would perform the pre-war international function of the Bank of England. Such a body would direct the flow of funds according to the needs of individual countries, not, as at present, in the opposite direction.

A word should be added on the question of tariffs. Before the war the tariff system of each country was determined by long-term considerations. During the last few years all countries (our own included) have found refuge in the doctrines of the

mercantilists of earlier days. Tariffs have been used not to direct the development of industry but to direct the immediate flow of trade. An adverse balance of trade is no longer regarded as an incident of economic growth but as a calamity to be avoided at all costs. An established system of protection is not inconsistent with the operation of the gold standard, but frequent tariff manipulation to meet fluctuating trade balances is bound to render any international currency standard impossible. It is too much to hope that the world will abandon tariffs as a measure of protection, but it will be difficult to maintain the gold standard unless the countries of the world are prepared to abandon the system of *ad hoc* trade restrictions to overcome occasional deficits on current accounts. I do not believe, however, that I am too optimistic in stating that this difficulty would quickly disappear. The new practice of adjusting tariffs to failures to balance payments is largely the product of the failure of our credit system. If liquid capital had gone to the rescue of, instead of running away from, countries with adverse balances the need for dealing with the situation in another way would not have arisen. I therefore believe that if we could solve the problem of controlling the flow of credit, either through the creation of an international exchange stabilisation fund, or in some other way, the difficulties created by the new restrictions upon trade would also be solved.

We are frequently told that a return to the gold standard is impossible so long as the world supply of gold is so largely concentrated in two countries. It is no doubt true that the present distribution of gold presents a serious difficulty, but I do not regard it as an insuperable difficulty. The present distribution of gold is the result of those post-war influences to which I have already referred. If we could restore those conditions which are essential to the maintenance of the gold standard it is not unlikely that a redistribution of gold according to apparent need would be accepted. Gold is only preferred to an earning asset so long as the earnings of the latter do not exceed the money estimate of the risk involved. In the last resort, however, the international price level in terms of gold matters less than the domestic price levels expressed in local currencies, so that the difficulty created by an unequal distribution of gold could be overcome by giving an appropriate gold value to paper currency and maintaining a relatively low legal reserve. Moreover, if domestic price levels, expressed in local currencies, are sufficiently high, the burden of fixed debts necessitating a flow of payments from one country to another would not be so heavy as to endanger the gold standard.

A recent judgment in this country, and still more recent pronouncements in the United States, have shown that debts contracted in gold are no longer payable in the gold value expressed in the bonds. A foreign debt payable "in sterling in gold" in this country can be paid in sterling; a gold bond payable in gold dollars can be paid in dollars. This decision has produced a profound effect upon the significance of the gold price level in the world and, therefore, upon the present distribution of gold supplies. For these reasons, while admitting the importance of a change in the distribution of gold, I do not believe that the present distribution, or the probable distribution in the near future, constitutes an insuperable obstacle to the return to the gold standard.

I hope it will be evident that I neither contemplate nor desire an immediate return to the gold standard. Many changes must take place before such action can be taken with safety. When a new currency measure is passed we shall be legislating not for a year but, we hope, for a generation or more. It should not be forgotten, however, that the gold standard is a form of discipline which may itself help to restore some of those conditions that enable it to be operated with success. It is a problem in the art of government to decide when the necessary changes have occurred, and how much may be left to the discipline of the standard itself. In deciding the actual gold value to be given to sterling, I hope that the post-war difficulties of the unsheltered industries will not be forgotten by the Treasury.

J. H. JONES

# A CRITICAL CONSIDERATION OF PROFESSOR PIGOU'S METHOD FOR DERIVING DEMAND CURVES

THE statistical method devised by Professor Pigou for the derivation of demand curves from market data [1] deserves the most attentive consideration for several reasons: first, because of the fascinating simplicity of the method itself; next, because of the possibility it seems to afford of estimating in each particular case the probable error of the results obtained; and, last but not least, because of the authority attaching to the author's name. The weight of his authority is in this case all the greater because he has evidently been won over by the merits of this method from a position of scepticism with respect to the usefulness of market data for the purpose in hand. He had said in the *Economics of Welfare* (1929 edition) that "attempts to determine the elasticity of demand for any commodity in any market by a direct comparison of prices and quantities are exposed to very great difficulties," [2] and "there is little hope that many elasticities will lend themselves to calculation in this direct way." [3] In the article of 1930 the attitude is changed. He expresses the belief that significant results may in many cases be obtained by the use of his new geometric method and, most important of all, that the reliability or unreliability of the results obtained in this way will be clearly indicated by the dispersion of the figures worked out in the course of the calculations. The advantages of the new method are brought out by comparison with the methods used by others. Referring to the underlying assumptions involved in Professor Schultz's method, he says, "It is not, however, easy to make explicit precisely what these conditions are. A mathematical machine is grinding out results; but the *exact* nature of what was put into the machine at the beginning is, at all events to non-expert readers, somewhat obscure." [4] "This," he says, "is true in a still higher degree of the more complicated

[1] A. C. Pigou, "The Statistical Derivation of Demand Curves," ECONOMIC JOURNAL, September 1930, pp. 384–400, and *Economic Essays and Addresses*, by A. C. Pigou and D. H. Robertson (1931). This method is not to be confused with his earlier method of calculating relative elasticities of demand from data contained in family budgets which first appeared in the ECONOMIC JOURNAL for 1910, and is also explained in the appendix to *Economics of Welfare*.

[2] *Economics of Welfare*, p. 780.

[3] *Economics of Welfare*, p. 781.

[4] ECONOMIC JOURNAL (1930), p. 390.

method . . . employed . . . by Dr. Wassily Leontief." [1] Then he goes on to point out " a more serious difficulty," namely, that, " while the objective sought by these writers . . . is avowedly the *most probable* demand curve . . . no explicit calculation is made of the probable error to which the results attained are subject." [2] His own method is then presented as a means of overcoming these objections.

Because the method is naturally so attractive, and because it has received weighty endorsement,[3] it merits the most careful consideration of all who are interested in the progress of price research. In the present article attention will be given mainly to the defects of the method, because it appears to the writer that some of these are of such a fundamental nature as to impair very greatly its practical usefulness, if not, indeed, to undermine the validity of the entire procedure.

The method depends upon four basic assumptions, not all expressly stated, yet clearly implied. They are as follows:

(*a*) It is assumed that the elasticity of demand for the commodity in question is so nearly the same for all quantities within the range covered by the data that the curve would appear on a double logarithmic chart as a straight line. The validity of this assumption, although in many cases seriously open to question, will be accepted provisionally for the purposes of the present discussion.

(*b*) It is assumed that the elasticity of demand remains unchanged even when the intensity of demand has been so altered that the curve is shifted from one position to another. The result of this is that the demand curves for the same commodity at different times must all appear as parallel lines on a double logarithmic chart. This assumption also will be accepted.

(*c*) It is assumed that, in those cases where the demand curve happens to have been shifting continuously in one direction while three chronologically successive price-quantity observations are made, an approximation to the slope of the demand curve can be obtained by calculating the slope of the three parallel straight lines which would pass through three observed points (with

[1] ECONOMIC JOURNAL (1930), p. 391. [2] ECONOMIC JOURNAL (1930), p. 391.

[3] Professor W. F. Ferger, in his article in the ECONOMIC JOURNAL for March 1932, endorses the method and recommends its use in the derivation of supply curves as well as demand curves.

the middle line passing through the second point) and which would be equidistant from one another.

(*d*) It is assumed that it is possible, merely by scrutinising the signs attached to the results, to distinguish these significant cases, in which the demand curve was actually moving continuously in the same direction, from all the other cases in which it was not; *i.e.* to distinguish between those calculated slopes which are supposed (according to the third assumption) to represent the slope of the demand curve and those which are to be discarded as representing nothing significant whatever.

The whole method is developed from a mathematical formula by means of which three equidistant parallel straight lines can be drawn through any three given points in a plane. Suppose that the points are $A$, $B$ and $C$ with the co-ordinates respectively of $(p_1, x_1)$, $(p_2, x_2)$, $(p_3, x_3)$, and that

$$d_1 = p_1 - p_2$$
$$d_2 = p_2 - p_3$$
$$c_1 = x_1 - x_2$$
$$c_2 = x_2 - x_3$$

Then the formula $\frac{d_1 - d_2}{c_1 - c_2}$ gives the slope of a triad of lines conforming to the above conditions.[1] In applying this formula to his economic data, Professor Pigou treats each price-quantity observation as a point on a double logarithmic chart. Taking these points then in chronological order three at a time, he calculates the slopes of the triads of equidistant parallel straight lines which would pass through them.

In order to follow through step by step the logic of the method, we must begin by considering a very special case. Suppose that the conditions of demand have been changing in such a way that the real demand curve, if it could be shown on our double logarithmic chart, would have moved continuously in one direction while three price-quantity observations were being obtained, and that the position of the curve when the second observation was obtained would have been *precisely* half-way between the positions occupied when the other two were obtained. In such a case the

[1] To avoid confusion it must be pointed out here that Professor Pigou unfortunately made the mistake of writing $\pm$ at the beginning of the formula, whereas the formula is correct only in its positive form. He admitted the error when his attention was directed to it by Professor Ferger. In his actual calculations he used the correct form, and that is the form accepted as the basis of discussion in the present paper.

slope calculated from the formula as Professor Pigou uses it would be *precisely* the slope of the actual demand curve that is being sought. The lines of the triad obtained from the formula would fall exactly upon the lines representing the demand curve in its three successive positions, and no other lines could possibly be found which would satisfy the conditions laid down. It was apparently the perception of the perfect relationship existing in such ideal cases that suggested the possibility of using the triad formula as the basis of an entirely new method for the derivation of statistical demand curves.

Professor Pigou does not suppose, of course, that the shifts of the demand curve in actual fact are ever likely to be precisely equal,[1] but he believes that *approximately* equal shifts will yield *approximately* correct results. He believes that there will still be a necessary mathematical relationship between the slope of the actual demand curves and the slope of the derived triad. He thinks that the error in the result obtained from the formula will be one of over-statement or of under-statement according as the demand curve moved more or less to the right or to the left between the first two observations or between the second two. Putting it in exact terms (using $a_1$ to represent the vertical distance between the first and second lines of the triad and $a_2$ to represent the distance between the second and third) he says :

"When $(a_1 - a_2)$ is positive, the slope is numerically $< -\frac{d_1 - d_2}{c_1 - c_2}$. When $(a_1 - a_2)$ is negative, the slope is numerically $> -\frac{d_1 - d_2}{c_1 - c_2}$. That is to say, when the curve proper to the third interval is further to the left of, or less to the right of, that proper to the second interval than that proper to the second interval is of that proper to the first, the formula $-\frac{d_1 - d_2}{c_1 - c_2}$

[1] Some interpreters insist that he does expect these ideal conditions to be realised in practice often enough to give him a basis for his calculations, and that this is the ground upon which his method should be criticised. That interpretation, however, is inconsistent with his own statements. On page 393 (ECONOMIC JOURNAL, 1930) he says, "The condition of equi-distance . . . will be *approximately* satisfied if and in so far as the state of demand is changing under the influence of causes that act in a continuous and gradual manner." (The italics are mine.) On page 394 he says, "As a rule, for most triads there is likely to be some disturbance consequent upon discrepant swings of demand as between the two pairs of intervals." It is also inconsistent with the procedure by which he decides in the end which is the most probable value for the elasticity he is measuring. Had he made his method depend on precisely equal shifts, he would not have chosen the median, but would have had to find two results that were perfectly identical.

under-states the numerical value of the slope of the curves: in the converse case it over-states it." [1]

This is supposed to follow from the formula $\frac{(d_1-d_2)-(a_1-a_2)}{c_1-c_2}$ which he uses earlier in the demonstration to represent the slope of any three parallel straight lines. But here Professor Pigou seems to have misinterpreted the significance of some of the plus and minus signs. An examination of the diagram below (Fig. 1) will quickly show that his statement is incorrect.

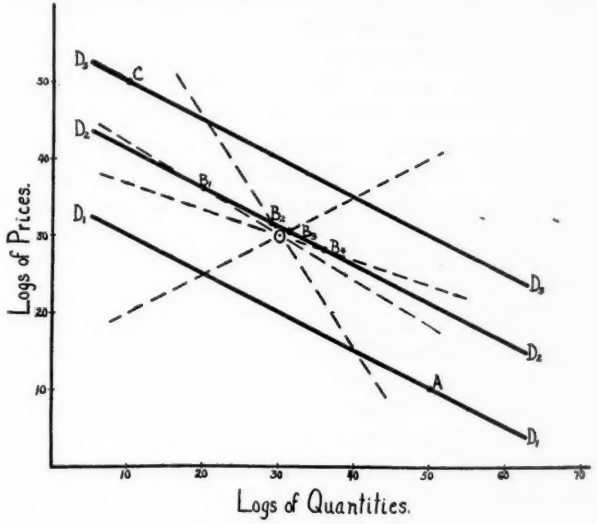


FIG. 1.

Suppose that the slope of the actual demand curve on a double logarithmic chart is $-\frac{1}{2}$, and that it has been shifting continuously to the right at a rate *very nearly*, although *not precisely*, constant while the three observations were being obtained. The positions occupied by the curve when the first, second and third observations were made are shown respectively by the lines $D_1D_1$, $D_2D_2$, $D_3D_3$. Under these conditions, according to Professor Pigou, "the formula $-\frac{d_1-d_2}{c_1-c_2}$ *under-states* the numerical value of the slope of the curves." As a matter of fact, it is just as likely to over-state it. Let the first observation give us point $A$ on our double logarithmic chart, with $p_1 = 50$ and $x_1 = 10$. Let the second observation give us point $B_1$ on the chart, with $p_2 = 36$

[1] ECONOMIC JOURNAL (1930), p. 392.

and $x_2 = 20$. Let the third observation give us point $C$ on the chart, with $p_3 = 10$ and $x_3 = 50$. Then the formula gives us a slope of $-\frac{3}{5}$. Comparing this with the actual numerical value of the slope of the demand curves ($-\frac{1}{2}$), we see that the bias in this case is just the opposite of what was predicted. The over-statement of the slope here was moderate; but it might easily have been great.

Although, for the sake of simplicity, round numbers are used in these illustrations, it is important to keep in mind the fact that they are supposed to be the *logarithms* of the prices and quantities actually obtained from the market records. It may be well at this point to call attention also to the fact that the hypothetical figures used in this and the following illustrations conform exactly to the conditions that are supposed to give the most accurate and dependable results. Professor Pigou says on page 395 of his article that we should "prefer the witness of triads where both the observed prices and the observed quantities differ substantially among themselves."

Suppose now, for example, that supply conditions had been different when the second observation was made and we got point $B_2$ with $p_2 = 31{\cdot}5$ and $x_2 = 29$. The formula now gives us a slope of $-\frac{3}{2}$. In this case a curve which is highly elastic is represented as if it were quite inelastic.

Again, suppose that our second observation had given us the point $B_3$ with $p_2 = 30{\cdot}5$ and $x_2 = 31$. Then we get a slope of $+\frac{1}{2}$. This measure is numerically correct, but that, of course, is purely accidental, since the triad obtained would be running in the opposite direction from the demand curves.

Finally, suppose that our second observation had given us the point $B_4$ with $p_2 = 28$ and $x_2 = 36$. Then we get a slope of $-\frac{1}{3}$. In this case the slope is under-stated.

It is apparent from the foregoing illustrations that no general rule can be based on the relative distances between the demand curves to tell us what bias will be found in the results obtained from the formula.

It is evident also that the slope obtained in any case depends not on the slope of the demand curves nor on the relative positions of the curves, but only on the particular positions of the three observed points. Since the line through $B$ must always pass through the mid-point between $A$ and $C$ (marked $O$ on the diagram), practically any slope could be obtained merely by moving the point $B$ along the demand curve $D_2D_2$. Each of the dotted lines in the diagram represents the middle line of one of the

possible triads that might be obtained. The spaces between them could be filled with any number of other lines passing through $O$, all of which would also give possible slopes for triads that might be taken to represent the same actual demand curves. The slopes would also be altered in a similar way by any changes in the points $A$ or $C$.

The points on the demand curves which can in practice be observed are those associated with the particular quantities that happen to have been marketed during the periods to which the price-quantity data relate. Their positions depend, therefore, as much on the conditions of supply as on the conditions of demand. And, since the movements of the supply curves are independent of the movements of the demand curves, it follows from the foregoing discussion that there is no necessary mathematical relationship between the slope obtained from the triad formula and the slope of the actual underlying demand curves themselves.[1]

It is still possible, of course, to defend the method on the ground that there is a tendency for the results obtained to be distributed in some systematic way around the true value for the slope of the underlying demand curve, and that therefore the median of the arrayed results is the most probable value. Professor Pigou did treat his results in this way, but does not seem to have realised how erratic the distribution was likely to be. He appears to have attributed the differences in the slopes obtained entirely to a single cause, unequal shiftings; and he seems to have thought of them as being proportionate to the deviations of the middle curve of every three from an exactly central position. That being so, it was only natural that he should expect the distribution of the results to be systematic and significant. He says, "On the assumption that the (logarithmic) demand curves of all the intervals are parallel straight

[1] The more constant the rate of shifting of the supply curve the greater will be the error in the results obtained. If the supply curve (assumed to be a straight line on the chart) remained fixed while the demand curve moved at a precisely constant rate, the result would be indeterminate, *i.e.* the figure obtained to represent the slope would be zero. If the supply curve remained fixed while the demand curve moved unequal distances, the slope obtained would be that of the supply curve. If both moved at precisely constant rates, the slope would again be indeterminate. If both moved at approximately constant rates, the second observation would give a point close to the middle point between the other two (like $B_2$ or $B_3$) and the triad slope would deviate widely from that of the demand curve. Actually the conditions required to give the most dependable results would be those in which the supply curve had swung back and forth from one extreme to the other between each pair of successive observations while the demand curve moved at an approximately constant rate.

lines, the figure in the final column derived from each triad may be regarded as an 'observation' of the elasticity of demand, subject to an 'error' *due to a deviation from equality* between the distance of the second line in the triad from the first and the distance of the third line from the second." [1] Professor Ferger points out that variations might also be caused by accidental errors in the data, but he does not think these are sufficient to cause any serious difficulty. When, however, we add to these the powerful and incalculable causes of variation discussed in the preceding paragraphs, it is difficult to believe that anything very significant could be learned from the array of results obtained.

In arriving at this conclusion I have assumed that we were dealing with cases in all of which the demand curves were moving continuously in one direction. It is only when we recognise that in actual fact the direction of movement will frequently be reversed while the observations are being obtained that the most fundamental weakness of the method is revealed.

When dealing with actual data, we do not know, as we do in our hypothetical illustrations, what movements have been taking place in conditions of supply and demand. All we have to work with are the successive observations of associated prices and quantities, which we take to represent the points of intersection of the unknown demand and supply curves at the times that the observations were made. From every three successive observations a calculation is to be made according to the triad formula in the hope of getting a figure that may represent the slope of the demand curves. In those cases where it happens that the demand curve was moving in a constant direction the results will be such as those examined above; but in cases where the direction was reversed while the observations were being made, there is not even a semblance of logical relationship between the derived slopes and the slopes of the real demand curves that we are trying to discover.

Professor Pigou himself recognises that the shiftings of the demand curves will often be erratic. He discusses eight different causes which may bring about changes in demand, and admits quite frankly that although some "act in a continuous and gradual manner . . . others . . . *are likely to operate sporadically.*" [2] Among such causes are: changes in expectation about the relation between future and present prices of the commodities directly concerned; changes in the prices of competing or complementary

[1] ECONOMIC JOURNAL (1930), p. 395 (italics mine).
[2] ECONOMIC JOURNAL (1930), p. 393 (italics mine).

goods; seasonal changes; changes in general business conditions during the different phases of a business cycle (affecting particularly the demand curves for producers' goods); and the accompanying changes in the real income of the community and its distribution among the different classes of society (affecting the demand curves for consumers' goods). These irregular changes and the consequent erratic shifts of the demand curves are accepted as natural elements in the problem, and are supposed to be taken account of satisfactorily in the procedure prescribed. Professor Pigou did not hesitate to apply his method even to such a commodity as copper. He does not claim that any significant results can be obtained from price-quantity observations obtained while these erratic shifts are taking place, but does believe that all the figures derived from such cases can be identified by the plus signs attached to them and can be eliminated from the calculations. That he is mistaken in this belief will be shown in the paragraphs which follow.

The difficulty arises from the fact that through any three given points $A$, $B$, and $C$, on our double logarithmic chart three different triads of equidistant parallel straight lines can be drawn. The middle line of one triad will run through $A$, the middle line of another through $B$, and the middle line of the third through $C$. These triads are easily obtained geometrically, since the middle line through any one point must bisect the line joining the other two. The slopes of all three triads may be obtained from the formula quoted above by treating the co-ordinates of each point in turn as $x_2y_2$. Whichever one is so treated is the one through which the middle line of the derived triad must pass.

Suppose, now, that the actual (but unknown) demand curve has moved first to the right, as the result of some temporary disturbance, and has then swung back almost to its original location, occupying the positions indicated on Fig. 2 by the solid lines $D_1D_1$, $D_2D_2$, and $D_3D_3$. Suppose that the points successively observed were $A$, $B$, and $C$ with co-ordinates (44, 16), (30, 50) and (20, 35) respectively.

Since the curve $D_3D_3$ occupies the middle position, the triad which would be significant according to Professor Pigou's own reasoning would be the one with its middle line passing through the point $C$. This, however, is not the triad the slope of which he would obtain from his actual calculations. Since in applying his formula he always treats the co-ordinates of the second observation as $p_2$ and $x_2$, the slope he obtains is the slope of the triad with its middle line passing through the point $B$ (indicated

by the dotted lines in the diagram). In this case the slope obtained from the formula would be $-\frac{4}{4\cdot 0}$, indicating an extremely elastic demand, whereas the actual demand is highly inelastic and the true demand curves have a slope of $-\frac{2}{1}$.

This wide discrepancy is not difficult to understand when we realise that the calculated slope must be such that the line through the point *B* will cut across all three of the demand curves within the narrow limits set by the other two observations. There is absolutely no reason to expect that the slope of this triad should resemble the slope of the real demand curves. By the very

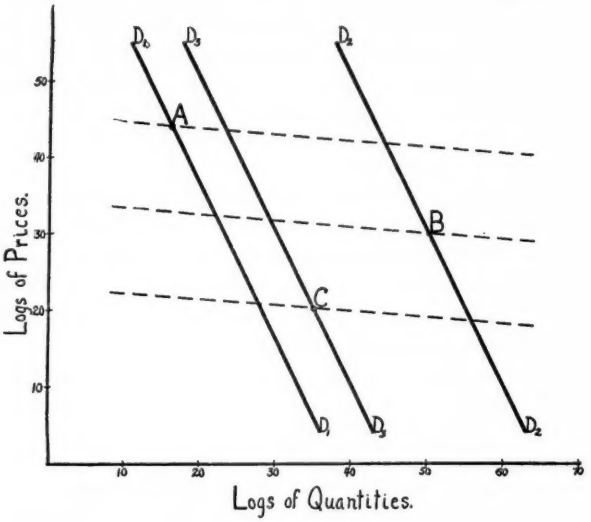


FIG. 2.

nature of the calculations the results obtained are more likely to be wrong than right; that is, they are more likely to misrepresent the slope of the demand curves than to represent it even approximately.

When spurious results obtained in this way are arrayed along with those obtained from the cases in which the shifting did happen to be in a constant direction, any faith we may have had in the tendency for the figures to distribute themselves systematically around the true value of the slope we are seeking is completely shaken. Yet it is from just such a hybrid series that Professor Pigou proposes that we should obtain our knowledge about the elasticities of demand. He rejects as irrelevant all the figures with positive signs, but accepts as significant for his purpose all

the figures with negative signs.[1] He has apparently been misled, through some slip in the earlier stages of his analysis, into the erroneous belief that all the negative figures obtained from his calculations must of necessity belong to a single homogeneous series derived entirely from cases in which the movement of the demand curve had been continuously in one direction. Nowhere in the discussion does he recognise the possibility that there could be any triad other than the relevant one which would have a negative slope.[2] If this possibility had been recognised he would undoubtedly have been led to reject the final series upon which the method depends as unreliable; except, perhaps, in special cases where it could be determined from external evidence of some sort which among the items were significant and which were not. As a matter of fact, the only other test he proposes to apply is the test of internal consistency. If the series as a whole is " chaotic," he would reject it; but if it appears to be consistent, he would use it as the basis for his conclusions.

In the light of the foregoing discussion it is evident that Professor Pigou's method is likely to lead in many cases to conclusions with respect to elasticities of demand which are widely at variance with the facts. If it happens, as it may in certain instances, that the demand curve has been shifting continuously in the same direction during the whole of the period to which the data relate, and that the changes in supply, from observation to observation, have been such that the calculated slopes are systematically distributed about the most probable slope of the actual demand curve, the result obtained will be approximately correct. If some means could be found of distinguishing these rather exceptional cases from all others, the method might be

[1] He does suggest that " it will be well to suspect the witness of triads " in which " the differences either among the observed prices or the observed quantities are very small " (ECONOMIC JOURNAL, 1930, p. 395), but, as we have seen above, this gives no assurance that the other figures, which are retained, will be significant.

[2] Indeed, in the explanation of the geometric basis of his method he plainly says that there can be only one triad with a negative slope. Having stated the triad formula with a plus-or-minus sign where there should only have been a plus sign, he goes on (apparently reasoning from this formula), " Thus two triads of lines can be drawn through our three points, the slope of the lines in each triad being equal numerically, but of opposite sign. If now we add the requirement that the lines passing through the three points must be inclined negatively, *only one triad* is possible " (p. 391; italics not his). Actually, however, as we have seen above, there are always three triads that can be drawn, and it would be only by pure coincidence that any two would have numerically equal slopes. It is quite possible, moreover, that all three triads may be negatively inclined (for example, the triads running through the points in Fig. 2 would have slopes of $-\frac{4}{45}$, $-\frac{17}{2}$, $-\frac{38}{53}$).

used to advantage in dealing with them, but in the absence of any basis for such discrimination the dangers of misinterpretation involved in the use of this ingenious method are so great as to offset completely any advantages it may have over other methods in simplicity and explicitness. What may be done in the future to amend the method is, of course, not to be foreseen. But it is fairly certain that dependence will have to be placed on external evidence of the validity rather than on internal; that consideration will have to be given to information regarding the economic forces that may be supposed to have affected the shiftings of the demand curves (and the supply curves) rather than to the characteristics or the relations of the figures obtained from the calculations. And if that is so, it seems to follow as a final conclusion that the method will always have to be used with the greatest caution, and that its legitimate use can probably never be extended beyond a strictly limited field of special cases which happen to lend themselves to this particular type of treatment.

It is only with difficulty that I have convinced myself that Professor Pigou could possibly be in error on any question relating to economics, and it is with regret that I find myself in disagreement, even upon a mere matter of statistical technique, with a man for whose work I have so great an admiration.

JOHN M. CASSELS

*Harvard University.*

The editor has kindly allowed me to see an advance proof of Dr. Cassels' interesting article. I have not had this matter in mind for some time and am not able to re-examine it thoroughly now. Nevertheless, if Dr. Cassels will forgive a somewhat underbaked reply, I should like to make a brief comment on his two main points.

First, it is clear that I had not considered sufficiently the nature of the error entailed by a failure in the condition of equi-distance. Incidentally, as Dr. Cassels shows, I had stated as a general truth a proposition about the *direction* of that error which is only true in certain conditions. Much more important than this, however, is his demonstration that a very small failure of the condition of equi-distance may involve a very large error in the measure of elasticity that any triad yields. Since it will seldom happen that the condition of equi-distance is *exactly* realised, this is a serious matter, and seems at first sight to render my method quite useless. A consideration of Dr. Cassels' first diagram suggests, however, a way out. It will be seen that the

error is only liable to be large if the observed point at the second date is near the middle of the straight line joining the other two observed points. It would seem, therefore, that figures obtained from triads with that characteristic should be regarded with grave suspicion, or perhaps rejected altogether, and attention concentrated on triads in which the distance between the observed point at the second date and the middle of Dr. Cassels' line $AC$ is considerable.

Secondly, Dr. Cassels points out that, when, between the second and third dates, the demand curve has swung in a direction opposite to that in which it is swinging between the first and the second, the triad in question is bound, on my method, to give a wrong reading. This is, of course, true, and should have been explicitly pointed out in my article. If we know, in respect of any triad, that this has been happening—and in some cases we may know it from external data—the witness of that triad should be rejected. But, if we do not know it, we are, I think, entitled to presume, at all events if our observations have been made at fairly short intervals, that only a small proportion of our triads will be of this kind, and that these will yield figures that differ widely from the mean. Should the whole array of figures prove to be chaotic, this presumption is weakened, and, as I said in my article, the whole thing is suspect. If, however, we obtain a substantial number of figures not differing greatly among themselves near the middle of our array, the presumption is confirmed, and the elasticity educed by the method is probably not far off the true one.

In sum, the method does not claim to be one that can be applied in a mechanical way with assurance beforehand of obtaining reliable results. It is necessary, after the arithmetical operations have been performed, to look at the general character of the resultant set of figures and—in the light, of course, of any other relevant knowledge that we may possess—to *judge* whether the inference about elasticity that a mechanical treatment of them suggests can safely be drawn. A. C. PIGOU

# ECONOMIC THEORY AND THE PROBLEMS OF A SOCIALIST ECONOMY

It has been a common practice for economists to employ the hypothesis of a "socialist economy" as a term of comparison: a comparison which has generally been used, not to delimit economic concepts and to stress their relevance to some limited historical context, but to assert their universality. As a rule, it has been assumed that in a socialist society the main propositions of economic theory would apply with undiminished force. Obstacles and problems would remain fundamentally the same; and the differences introduced by State investment and an altered distribution of wealth would be of no different order from those which might arise in an individualist system at different times and in different places. To the economist the rise and fall of institutions are a secondary affair. A change of property-rights and of class relationships may profoundly concern the social psychologist or the creator of ethical systems, but they will alter the form of "the economic problem" hardly at all.[1]

In the past, such statements have generally been assumed unquestioned, rather than analysed and defended; and little attempt has been made to formulate the detailed corollaries which such statements imply. Yet, clearly, if they are true, such statements have very great significance, not only for practice, but in the very definition of economic concepts. In recent years a more direct practical interest in the matter has caused these propositions to be more concretely framed. The decline of the competitive system, on the one hand, and the achievements of

[1] For instance, Mr. H. D. Henderson speaks of "the existence in the economic world of an order more profound and more permanent than any of our social schemes, and equally applicable to them all," and of economic laws and relationships which "seem altogether more fundamental than our present industrial system" (*Supply and Demand*, pp. 11 and 141); while Wieser similarly declares that "the communistic state must retain the same law in force, or its economy will become chaos" (*Natural Value*, p. 164). Wieser even goes so far as to identify "natural value" with "value as it would exist in the communist state." Pareto asserts that under Socialism "commodities will be distributed according to the rules which we have discovered in our study of a régime of competition" (*Cours*, Vol. II, 364), and Cassel assures us that "new lines of economic policy, adopted by socialist reformers, which promise anything for the future, tend, so far as prices are concerned, merely to work out the classical ideal of a system of prices" (*Theory of Social Economy*, Vol. I, p. 76).

Soviet economy, on the other, have given the question a topical interest. As Mr. H. D. Dickinson has reminded us in the June issue of the ECONOMIC JOURNAL, a virtual school of writers, such as Mises and Brutzkus, has developed, declaring that a socialist economy must fail because the absence of a free market and a price-system would preclude the application of any economic criteria. Against them, others, such as Mr. Dickinson, have proclaimed the possibility of combining a socialist economy with a price-system: a combination which, it is alleged, would provide superior criteria of costs and of demand to those which rule in a capitalist world.[1] Mr. Dickinson tells us that a socialist State in the sale of finished products and in the purchase of the primary agents of products need not, and should not, act as a monopolist: it could, and should, allow these prices to be fixed, on the one hand by the competition of consumers, on the other hand by the competition of suppliers of the agents of production. In other words, it could keep sufficient competition alive (in the purchase of final products and the supply of primary agents) to maintain approximately the same system of selling-prices and of costs as would prevail (given the same distribution of income) in an individualist world. But these two parties both share a common assumption. Both assume that the categories of economic theory are equally valid in a socialist as in an individualist order. Here there is no debate between them. Yet this is an assumption that has never been fully explored.

It has become fashionable to-day to discard the hedonistic basis on which the modern theory of value was formerly supposed to rest, and to treat Economics as a non-normative theory of equilibrium. As such, it becomes something very different from the Political Economy of Adam Smith. No longer a collection of precepts in advice to the Sovereign, but a formal technique is what it supplies—a system of functional equations, a branch of applied mathematics, postulating a formal relationship between certain quantities. Professor Robbins, who has carried this contemporary fashion to its logical conclusion, explicitly emphasises the purely formal character of economic theory, without, however, seizing the full implications of the statement. Economics, as a theory of equilibrium, he points out, is unconcerned with

[1] Cf. ECONOMIC JOURNAL, XLIII, 170, pp. 237 *seq.*; also an article by Mr. H. D. Dickinson in *The Political Quarterly*, Vol. I, No. 4. A similar view has been expressed by W. C. Ropner, *The Problem of Pricing in a Socialist State*. The present writer also subscribed to this opinion, devoting a theoretical Excursus of his *Russian Economic Development* to an exposition of this claim. He now believes this view to be wrong.

norms and ends: it is concerned solely with constructing patterns for the appropriate adaptation of scarce means to given purposes. The corollaries of economic theory do not depend upon facts of experience or of history, but "are implicit in our definition of the subject-matter of Economic Science as a whole." [1] One might have thought this a sufficient definition of such corollaries as tautologies, and that propositions which contained no element of the real world could not, unaided, support judgments concerning the real world. But such an objection may, perhaps, be thought too pedantic to carry immediate persuasion.

The more formal, of course, that Economics is made, the more universal become its propositions; which might seem to imply that the equations of Cassel would have more application to a socialist economy than the more homely precepts of Adam Smith. But, in becoming more formal, such propositions have at the same time quite changed their significance. The theory of value, conceived simply as a theory of equilibrium, can postulate that, in a given set of circumstances, prices will conform to a certain pattern; in a different set of circumstances to a different pattern. It can say this, and it can say no more. It may *define* a "maximum" as consisting in one particular "pattern"; but the definition will be entirely arbitrary. It is powerless to pass judgment upon any particular arrangement of resources in the real world, and declare one arrangement to be preferable or more "economic" than another, for the reason that it has specifically excluded any assumption about the ends in view. It is powerless to *prescribe* a maximum for us. A reviewer in this JOURNAL recently complained that in a socialist economy the problem would be not that the planning authority "(would) not be able to reach a position of equilibrium, but that it (could) reach too many such positions—precisely an infinite number—and (have) no means of choice between them." [2] But this is precisely the dilemma of any pure equilibrium theory: it can give no means at all for preferring the "unique" equilibrium of an individualist economy to any of the $n$ possible alternative equilibria that a planned economy might choose. Economic theory reduced to these dimensions provides absolutely no criterion of judgment at all.

Yet, when it comes to such judgments, the equilibrium theorist, of course, tacitly appeals to a norm. Despite his trumpetings against the welfare-economists, he in fact secretly

[1] *An Essay on the Nature and Significance of Economic Science*, p. 75.
[2] N. Kaldor, ECONOMIC JOURNAL, June 1932, p. 279.

imports an assumption which at once places him precisely on the same ground as the Hedonist whom he has pretended to disown. And in this assumption the whole apparatus of Utility and Welfare, which it was his pride to dispense with, is implied. But the manœuvre has not been for nothing : it has enabled the scientific dignity of an ethical neutrality to be combined with an undiminished capacity to deliver judgments on practical affairs. The crucial assumption is as simple as it is questionable : it amounts to the sacredness of consumers' preferences (as a general rule, and subject to unimportant exceptions here and there).[1] The virtues of " economic democracy " which it confers on a free market rest on a similar sacredness of individual choice to the virtues of Parliamentary democracy. Both operate through a convenient franchise system : in the one votes are cast by offers on a market, in the other by crosses at a polling booth. The highest economic good consists in giving the consumer what he thinks he wants, as political good consists in giving the people the government it thinks it deserves. Both conceptions are part of our bourgeois heritage from the nineteenth century. But there is no need to show that there are fallacies in the latter to demonstrate that there are fallacies in the former. The effect of the advertiser on economic choice may be taken as a fair parallel to that of the Press magnate on political opinion : both damage the sacredness of the popular verdict pretty ruthlessly; in both spheres it would seem that bad money drives out good. But in the economic sphere there is not even an approach to universal suffrage : on the contrary, a widely graded system of plural voting is the rule. Some men poll each a thousand votes to another's one. Moreover, like the old-fashioned squire, the possessors of many economic " votes " powerfully influence the verdict of the mass—they " set the pace," establish the conventions for the multitude and the standards which others strive to imitate and attain.

Mr. Dickinson would have us believe that in a socialist society the objections to the economic democracy of the market, like those to the democracy of the polls, would lose their force. But this is very far from being the case. Unless there were complete equality of reward, " plural voting " would still remain, if

[1] This is the assumption on which Marshall's structure rests. In a footnote he announces that for reasons of practical convenience he will identify " desire " with " satisfaction," and " fall back on the measurement which economics supplies of the motive or moving force to action; and to make it serve, with all its faults, *both* for the desires which prompt activities and for the satisfactions which result from them " (*Principles*, pp. 92–3).

diminished; whereas, if equality of reward prevailed, market valuations would *ipso facto* lose their alleged significance, since money costs would have no meaning. If carpenters are scarcer or more costly to train than scavengers, the market will place a higher value upon their services, and carpenters will derive a higher income and have greater "voting-power" as consumers. On the side of supply the extra "costliness" of carpenters will receive expression, but only at the expense of giving carpenters a differential "pull" as consumers, and hence of vitiating the index of demand. On the other hand, if carpenters and scavengers are to be given equal weight as consumers by assuring them equal incomes, then the extra "costliness" of carpenters will find no expression in costs of production. Here is the central dilemma. Precisely because consumers are also producers, both "costs" and "needs" are precluded from receiving simultaneous expression in the same system of market valuations. Precisely to the extent that market valuations are rendered adequate in one direction they lose their significance in the other. Mr. Dickinson cannot have it both ways.

But this is not all: this is not the only reason why a price-system under socialism might still be far from constituting a "perfect" "automatic" regulator of economic affairs. If consumers' choice under capitalism was so malleable by convention and seducible by the advertising agent, what right have we to assume that under socialism it will be supremely wise? If it was so corruptible then, why is it suddenly reliable now? Or if it needed to be "educated" then, why are we to accept the verdict of its untutored state now? If taste is mainly acquired, rather than innate, and shaped by culture and convention, as seems to be the case, there is no reason why, in a socialist order, the State should entirely abrogate the right of creating taste in favour of being its creature. In the creation of "new wants," in particular, with which economic progress is so largely concerned, the verdict of a price-system can never give more than a modicum of aid.

Even were it free of these defects, there is a serious limit to the claim of a free market system to provide an automatic index and regulator of economic relationships—a limit which affects one of the fundamental relations in economic society. For this fundamental relation between the production of immediately consumable goods and the production of capital goods it can afford no criterion. This limit, which concerns the very core of the problem of costs, is not only customarily neglected in

discussions of the subject, but is even by implication denied. If a price-system prevails, the use of property—of plant, buildings and land—will be priced, whether in a capitalist or a socialist régime. What is to be the basis of this relation between these two categories of cost—the hire of a lathe for a day and of a man's labour for a day? On the answer to this question the whole costing problem turns, and the whole "balance" between different types of industry depends. But the question receives no answer from any spontaneous verdict of a free market; since the two categories of cost are incurred by dissimilar agencies (or persons).[1] Neither is it answered in a socialist any more than in a capitalist economy. In a capitalist society the two classes of productive agencies are supplied by two distinct social classes; and the pricing of property depends upon the level of wages (*i.e.* the supply-price of labour) relative to productivity, modified by the rate of saving. In a socialist society property will be in the hands of the State, and this fundamental cost-relation will, of necessity, be determined *a priori* by the decisions of the State as to the proportion of resources to be devoted to the production of consumable goods and of capital goods. That a free market can and must provide the criterion as to what this relation should be is a common illusion—an illusion which seems to lie behind a great deal of the talk about a "natural" rate of interest, particularly of the "necessity" of being ruled by this "natural" rate in a socialist community. In a socialist society there is no excuse for the illusion. The relation is clearly a determining, not a determined, factor in the market system. In a socialist society the rate of interest, the level of wages and the distribution of resources between constructional and finishing trades are all elements in a single decision taken by the State as to the distribution of resources between present and future. They are each constituent parts of that decision, not conditioning influences over it. Here least of all can any appeal be made to "economic voting"—an appeal to the time-preferences of separate individuals; for, in judgment of the future the "natural" individual is notoriously unreliable.

But it may be urged: assuming that a given rate of time-preference and a given scale of need are postulated, will there not still remain the question of attaining a maximum relative to these postulated conditions? Will not the "principle of

[1] In the manner in which equilibrium theory is usually stated there is assumed to be a complete formal parallelism between demand and supply. But this formal treatment neglects this very significant difference of fact.

least cost" require that resources are distributed strictly according to a certain pattern, and anything which does not conform to this pattern be characterised as "uneconomic"? In other words, must not the principle of equalising the marginal yield of capital in all uses have sway? Mr. Dickinson takes it as axiomatic that "equilibrium" must be obtained "by pushing the investment of resources up to the same number of years' purchase in all lines of production."

Let us for the moment admit that such a principle must rule, and inquire what this in practice must imply. To secure this ideal distribution of resources, it would certainly be necessary to express the priority of different needs, on the one hand, and to express costs, on the other hand, in terms of some common denominator—to reduce qualitative preferences to some quantitative scale. ("Costs" would here need to include "costs" conventionally assigned to all scarce resources, including for instance land.) It is also true that this would require some system of centralised economic accounting as a basis for the decisions of economic planning bodies. But it would by no means necessitate the operation of a free market system to afford the automatic "index" of economic priority. There is no warrant for assuming that the index which a free market would provide would be preferable to what could be constructed in other ways: as has been suggested above, there is reason to think that it would be definitely inferior. Moreover, it would seem as though the allocation of certain types of resources, such as urban sites and building accommodation, education, research, health and recreational facilities, might adequately be made without any very complex calculations (as, indeed, happens with a number of such things to-day).

Even so, has this matter of achieving a relative maximum such prime importance, after all? Even admitting it to have *some* importance, has it at any rate that priority of importance which the professional pride of economists is wont to assign to it? What is lost by failing to attain this maximum may well be of a lower order than the probable error in any scale of economic priorities, established by a free market or in any other way. But there is a doubt which goes deeper than this. To closer examination it is not at all clear, when one has attained this desired allocation of resources, what it is that has been maximised; and one is tempted to the suspicion that to strive after such a maximum is very like looking in a dark room for a black hat that may be entirely subjective, after all. Let us

suppose that a Socialist State has postulated a certain rate of time-preference as keynote to its capital investment policy. The economic maximum of which we have spoken requires that this should be *consistently* applied throughout the whole economic system. But let us suppose that the planning authorities do not apply it consistently in all directions—that they finance technical advance in certain directions more liberally than in others; that they put lifts in some office buildings and not in others; that they instal a conveyor system in the boot manufacture of one locality, but not in neighbouring woollen clothing factories; that they use tractors and combine-harvesters on the wheat-farms of one district and allow the rye-farms of another district to be harvested by the old-fashioned horse-reaper and binder. This seems to amount to the fact that activities in certain branches of the economic system are being controlled by a different rate of time-discount from others. If this were an inconsistency in rates of development likely to be cumulative or to persist *ad infinitum*, a case might perhaps be made out against such favouritism. But if it is something which will be adjusted in the course of time, what precisely is the economic loss occasioned by the temporary divergence? True, in certain cases the divergence of technical development may offend against what one may call the *technical* rigidities of the economic system; as, for instance, if the requisite ratio between coal-cutters and coal-trucks is not observed, or if there are tractors on every farm but no motor-lorries for transport between farm and railhead. But these are matters which the layman could most easily adjust without the intervention of any principle about equalising marginal yield. The "economic loss" which is the economist's concern—which is assumed to result from violating this principle of equal marginal yield—is something in addition to such technical maladjustments, and claims the right to exist in their absence. If one is willing to use the concept of Utility, one can presumably define such loss, as "loss of utilities through time." Yet to give such a definition any precise meaning, do we not require some objective standard of time-preference, which is just what economic theory does not afford us? Alternatively, one can presumably define such loss as the fact that the present value-product of finished goods will be less than it might have been, had the existing stock of capital-instruments been differently distributed. But since capital accumulation essentially implies the sacrifice of present values for future values, it seems hard to give to such a definition much

concrete significance. To introduce the fact of new investment is to introduce a factor of change; and with such change in the real world come changed costs and also changing demands (new wants and changed conventions). To apply dogmatically the postulates of a static equilibrium to such a continually moving situation would seem a particularly barren feat of abstraction. The more rapid the rate of capital accumulation, the more meaningless the abstraction. The proposition that the stable position for a horse is when its four feet are firmly planted on the ground would be remarkably little use as a basis for training Derby-winners.

There seems to be one reason in particular why a socialist State should observe, not one equality of net marginal yield, but an alternative rule as the principle of capital investment. This reason, which has been pointed out to me by Mr. Sraffa, is concerned with the fact of obsolescence and of uncertainties arising from technical innovation which waits upon a fall of interest-rates to bring it to birth. It is a commonplace that technical progress does not merely supplement existing equipment, but renders a good deal of it obsolete; and consequently every new phase of capital accumulation, resulting, as it tends to do, in lengthened processes of production, renders obsolete a large part of the older and shorter processes of production. Where the rate of capital accumulation is low and the length of life of material equipment is short, the resulting wastage is not serious. But when periods of very rapid capital accumulation coincide with technical epochs in economic history (as during the industrial revolution; in Soviet Russia; and possibly to a smaller extent in the rest of the contemporary world), the wastage which occurs from the scrapping of plant and of the old localised economic units will be abnormally large. In an individualist economy it would seem that the result of a future fall in the rate of interest, as the result of the growth of capital accumulation, is seldom adequately discounted by investors or *entrepreneurs* (a fact to which recurring crises may well be witness). At least, such discount as is made tends to be based on rule-of-thumb generalisation from the immediate past (*e.g.* amortisation allowances) which does not allow for any abnormal bursts of obsolescence, such as, for instance, has probably marked the last fifteen years. But to the extent that such changes could be foreseen, as they could with some approximation in a planned economy, it would be economical to invest in the new technical processes in advance of that fall in the interest-rate which would

later render them profitable: in other words, to violate the principle of equimarginal returns and apply a *different* time-discount to different sections of an industry and of the economic system, investing part of the available capital resources in ways which yield, not the normal interest-rate of to-day, but what will be the normal rate, say, ten or twenty years from now. The advantage would consist in the lower obsolescence and the longer term of usefulness of the plant. To take a fanciful example: if one did not realise that in five years' time one would be rich enough to build a palace, one might build oneself a house, destined later to become redundant. But if one had been able to forecast the windfall of five years hence, it would have paid one to forego the house and live in a bungalow in the interim, and with the difference commence to lay the foundations of the palace.

This can be graphically illustrated in the analogy of the "pursuit-curve." A dog is situated at right angles to the path along which his master is bicycling. The dog is running towards his master, and, influenced by a simple conditioned reflex, runs always in the direction of his master at the given moment; with the result that his path in pursuit of his master is a curve. But if the dog could have acted on forethought and calculation, he would have taken a straight line to the point along the path which his master would presently reach. A planned economy, it would seem, should take a similar straight line towards a technical level of the future; and the ultimate economising of capital to produce a given result (or, conversely, the more rapid rate of technical advance financed by a given rate of investment) will be the difference in length between the straight line and the curve.[1]

I am conscious that what I have said has been mainly of a negative order. But, as Kant observed, negative may be as significant as positive conclusions in setting thought on to new paths. Yet I do not wish to follow Kant and "limit knowledge in order to make way for faith." Planned economy will have its economic laws, as has *laissez-faire* economy; it will have its economic accounting and its calculation. But until we have

[1] This principle will apply, not only inside a particular industry, but also to the structure of the whole economic system in its balance between consumption industries and constructional trades. This would suggest that capital in the latter should always be in forms with a lower capital-yield than capital in the former. It is interesting in this connection to note the habit in Soviet economy for some years of deliberately subsidising "heavy industry" out of the profits of the lighter finishing trades.

cleared the site of débris, we cannot commence to dig foundations; and until we have discarded the false analogies which confuse the question, economists and their analyses are likely to shed more obscurity than enlightenment. Interest in the question, moreover, is not solely topical. Because of the light which it throws on the significance of economic concepts, the issue may well be a crucial one, on which the whole future of economic theory may turn.

MAURICE DOBB

# THE PERIOD OF PRODUCTION AND INDUSTRIAL FLUCTUATIONS

PROF. HAYEK and other writers of the Viennese School, whose work represents, I believe, an important contribution to our understanding of certain aspects of industrial fluctuations, have sought to explain such fluctuations in terms of Böhm-Bawerk's theory of Capital, notably in terms of variations in the length of the average period of production.[1] This attempt has been freely criticised in details.[2] But, as far as I am aware, no examination has yet been made of the central problem whether the Böhm-Bawerkian categories are really applicable to short-run phenomena. These notes, which deal specifically with Böhm's time-concepts, are intended as a contribution to such a study.

## I

Böhm's [3] conception of the nature of the average period of production and the part it plays in his theory of capital may be seen from the following summary of that theory.[4]

The essential function of capital is to allow time to elapse between the beginning and the end of productive processes. It is a fact to which experience amply testifies that the yield of a

[1] Hayek, "Prices and Production," London, 1931. Article on "Kapitalaufzehrung" (Capital Consumption) in *Weltwirtschaftliches Archiv*, Bd. 36, 1932. Among other important works on this subject by Viennese writers may be mentioned: Mises, *Theorie des Geldes und der Umlaufsmittel*, 2nd edition, Münich, 1924. Machlup, *Börsenkredit, Industriekredit und Kapitalbildung*, Vienna, 1932. Schiff, *Kapitalbildung und Kapitalaufzehrung*, Vienna, 1933.

[2] Cf. A. H. Hansen and H. Tout, "Investment and Saving in Business Cycle Theory," *Econometrica*, April, 1933.

[3] On Böhm-Bawerk's version of the theory of Capital, the work of Wicksell and the modern Austrian School is directly based. It should be noted, however, that almost every element in Böhm's exposition is to be found in previous writings; and he added little except clarity to that of Carl Menger. An analysis of the relationship between amount of capital, period of production and magnitude of final product plays a considerable part in Jevons's *Theory of Political Economy*, and in the second volume of Marx's *Capital* the various kinds of time-factor—periods of production, of turn-over, of circulation, etc.—are exhaustively treated. For the development of the theory of the roundabout processes of production Rodbertus was responsible.

[4] The principal passages in the *Positive Theorie des Kapitals* dealing with the period of production are to be found on pp. 17–21, 117–121, 4th edition, Jena, 1921, and in Exkurse I, II and V.

given outlay of original means of production can be increased by the adoption of wisely chosen roundabout processes of production or, what is the same thing, by applying current resources to satisfy the needs of a more distant future. Roundabout processes of production is a synonym for the capitalistic structure of production (to be distinguished, of course, from the capitalistic organisation of society), and capital is defined as the aggregate of the "intermediate products" which appear on the several stages of the roundabout journey.[1]

In this picture there is no place for the distinction between fixed and circulating capital: all intermediate products are regarded as passing more or less quickly into consumers' goods. An abstract grouping of existing goods of all kinds can be made according to distance in time from the consumer.[2] The maintenance of this time-grouping is equivalent to the maintenance of capital or stationary conditions. Production becomes more capitalistic as the proportion of the more distant time-groups increases.

An alternative index of the structure of production and measure of "Capital per head"—one used far more frequently by Böhm-Bawerk—is the average period of production.

This concept is derived from that of the average production period of a single consumption good, which is the average time elapsing between the successive doses of original factors of production[3] required for the gestation of the good (including, of course, the original labour spent on the manufacture of machines, the mining of ore, etc., *ad infinitum*) and its completion. A simple example is given.[4] If the production of a commodity requires in all 100 days of labour, of which one day was spent 10 years before completion of the commodity, another 9 years before, others respectively 8, 7, 6, 5, 4, 3, 2 and 1 years before, while the remaining 90 days were expended immediately before the completion, its average production period is

$$\frac{10—9—8—7—6—5—4—3—2—1—0}{100} = \frac{55}{100} \text{ years,}$$

or just over half a year.

[1] *Positive Theorie*, p. 16. When dealing with interest, Böhm treats capita in the Jevonian manner as a Subsistence Fund.

[2] *Ibid.*, Bk. II, Ch. IV, pp. 136 *sqq.*

[3] In the Austrian theory of capital land and labour are considered as the original factors of production. Böhm omits land for the sake of simplicity in the development of the foregoing argument. Wicksell completes Böhm's theory by introducing land, but this does not alter the argument in fundamentals.

[4] *Positive Theorie*, p. 118.

A lengthening of the average production period does not necessarily mean any lengthening of the time between the first and last applications of resources (the absolute production period), but merely an increase in the proportionate expenditure of resources at the earlier stages, or, in other words, an increase in capital used.[1]

The general average production period would be determined in accordance with the simple formula given above. A lengthening of this period, which is identified with production with more capital per head and the adoption of more roundabout methods of production, was considered by Böhm to be the normal condition of progress. For apart from "inventions" there is no means of increasing the consumable product of given resources (*i.e.* the national dividend) except by making them work for a more distant future.

## II

The average period of production in the above sense looks to the past: it is the average period between the beginning and the end of the processes by which the present output of consumption goods has been produced. In this sense, a change in the period means a change in the proportion of past labour working with present labour, which is, by the definition of capital, equal to a change in the amount of capital per head. The average period prevailing at any moment would be determined by the dates at which the original doses of labour which have contributed to produce the present supply of consumption goods were applied.

But the "period" is also conceived as looking to the future[2]: as the average period elapsing between the application of present labour and the completion of its final consumable product.[3]

[1] Mr. Fisher writes (ECONOMIC JOURNAL, September 1933) that the general average production period would not necessarily be lengthened even if the average period of each commodity were simultaneously lengthened. This is to me unintelligible. If all the individual periods are extended, the average must also rise. The "relative importance of the items whose sizes increase" is surely irrelevant.

[2] This distinction was, I believe, first drawn in an article by F. Burkhardt referred to again below: "Die Schemata des Stationären Kreislaufs bei Böhm-Bawerk und Marx," *Weltwirtschaftliches Archiv*, Bd. 34, 1931. In a recent article entitled "Capital and Fluctuations" (to be published shortly in *Econometrica*), which I have had the opportunity of seeing in manuscript, Prof. Hayek distinguishes between a completed and an uncompleted structure of production, and points out very clearly the conditions required for the completion of processes begun and for the maintenance of a stable "structure of production." This article, which is a valuable amplification of Prof. Hayek's argument as set forth in *Prices and Production*, does not, however, touch the main problem with which these notes are concerned.

[3] *Positive Theorie*, p. 120.

Böhm writes, "The more capitalistic production is, the smaller the proportion of total original resources available in a given year whose product is consumed in that year."[1] In this sense the average production period would be measured on the following lines: in the simple case of a tool required at a final stage of production (*e.g.* the awl of a cobbler), produced in a day and expected to make a uniform productive contribution for 5 years, the average period of production in respect of the original factors which produced the tool would be $2\frac{1}{2}$ years.

It is this forward-looking or anticipated average period of production (which corresponds to Jevons's *Time of Investment*)[2] that is relevant to the theory of interest and the generalised theory of marginal productivity.[3] Starting from the propositions that the longer the period for which resources are invested the greater the final product, and that with each unitary extension of this period there is a decline in the increment of product secured (the theory of the *Mehrergiebigkeit der Umwege*), Böhm conceived pure interest on capital as determined by the product of the last period-extension which the available supply of capital renders possible. Capital in this context is, of course, "capital-disposal" or free capital, of which the "real" counterpart is the subsistence-fund.[4] The market-rate of interest regulates the production (investment) period, a lowering of the rate involving an extension, a raising a contraction of that period. But the normal (equilibrium) rate of interest and the production period are both dependent on other factors. In the famous chapter of the *Positive Theorie* entitled "Der Kapitalmarkt in voller Entfaltung" (Bk. IV, Chapter III) Böhm shows how, given capital (subsistence-fund) available for investment, numbers of workers and the relative productivity of their labour invested for different periods, both the length of the

[1] *Positive Theorie*, p. 120.

[2] Jevons, *Theory of Political Economy*, 4th edition, London, 1911, Ch. VII. I have used the term "anticipated production period" in the following argument in order the better to emphasise a distinction which is irrelevant to the purpose for which the concept of an investment period is generally used.

[3] To be exact, the relevant time-factor is the waiting-period (*Wartezeit*)—*i.e.* the time between the payment of labour and the sale of its product. The standard exposition of the rôle of the time-factor in the theory of the marginal productivity of capital is that of Wicksell, *Vorlesungen über Nationaloekonomie*, Vol. I, pp. 211 *sqq.*

[4] The subsistence-fund, as conceived by Böhm-Bawerk, covers not only the existing stock of consumption-goods which are destined for payment to the original factors of production, but also the whole stock of intermediate goods, which are a potential source of consumption goods. Thus the subsistence-fund would allow society to "subsist" for a time, even if the replacement of capital goods, as they turn into consumption goods, were to cease entirely.

production (investment) period and the rate of interest are simultaneously determined.

To recapitulate the distinction which I have endeavoured to draw in the present section. Böhm uses the average production period in both of the following senses: (1) as the "time" which results from tracing the dates at which the original factors contributed in the past to produce the present output of consumption goods; and (2) as that which results from considering at what time in the future the product of the present stock of resources will emerge in consumable form.

## III

For the description of "timeless" relationships and for the purpose of the general theory which deals with the slow changes in the time-structure of production accompanying the secular accumulation of capital, the distinction between these two senses of the average production period is of no consequence, for although the "periods" yielded by the two methods of reckoning may not be of identical length, their behaviour will correspond. But over the short period this will often not be true. And I believe that in the analysis of short-period changes confusion is inevitable unless the two senses are clearly distinguished.

In conditions other than of stationary equilibrium the relations between the two senses of the average production period, which for the sake of convenience will here be called the anticipated and completed periods, would seem to be as follows.

A lengthening or a shortening of the first period must always precede any corresponding change in the second, for new processes take time to complete and put into operation, and once in operation are not immediately abandoned when investment activity declines.

Starting from an equilibrium position, assuming the completion of all new processes begun, a lengthening of the anticipated period —which in these conditions must represent net saving—would, of course, be followed after a time by an exactly equal lengthening of the completed period. And *mutatis mutandis* a decline in the former period would be eventually followed by an exactly corresponding decline in the latter. But anticipations are not always fulfilled—this, indeed, is the latent tragedy of the boom. And if one abandons equilibrium assumptions, the two average periods do not even necessarily follow one another. It is quite possible that at the beginning of a depression, when the anticipated period

rapidly contracts, the completed period might be lengthened as a result, first, of the completion of some of the roundabout processes begun during the boom, and secondly, of the increase in the average age of fixed capital due to the suspension or reduction of replacement.[1] Again, at the trough of a depression the anticipated period normally stands below the level necessary to maintain the existing processes and the capital required for these processes is being "consumed." The anticipated period can in these circumstances rise temporarily above the equilibrium level until capital has been replaced (falling thereafter to that equilibrium level) without initiating any lengthening of the completed period. Similarly, from the peak of the boom it can fall temporarily below the level of the prevailing completed period without instigating a fall in the latter.

In "Prices and Production" (Chs. II and III) and elsewhere Prof. Hayek maintains, in brief, that through the expansion of credit the average period of production is lengthened during the boom further than it can be permanently maintained, and that the crisis represents the inevitable subsequent transition to a shorter "period." It is clear from the argument developed above that the time-element, the fluctuations of which are characteristic of the trade cycle, is the anticipated and not the completed period. The advance in the first during the boom would appear to represent partly (and particularly in the early stages of the boom) the replacement of the capital required for the existing processes of production and partly perhaps an attempt to lengthen the roundabout processes of production. This anticipation may be falsified (1) through time-saving invention [2] and (2)

[1] Hayek shows in his forthcoming article on "Capital and Fluctuations" that the structure of production must contract if "free capital" declines more rapidly than the need for it for the purpose of completing processes under way. This is, of course, not in contradiction with the above argument.

[2] Time-saving should here be understood not in its usual technological sense (as used *e.g.* by Cassel), but as synonymous with capital-saving. In this sense an invention may be regarded as "capital-saving," from the point of view of the horizontal analysis of coefficients of production, where capital is treated as co-ordinate with the other two factors, and as "time-saving" from the point of view of the vertical distribution of resources as measured by the "period of production." Whether an investment which saves time in the turnover of goods in a technical sense, but requires more capital equipment, lengthens or shortens the "period of production" depends on the relations between the amount of time saved on the turnover, the amount of the new capital and the stage of production at which it is introduced. Strictly in accordance with Böhm's general position, the adoption of time or capital-saving inventions would have no effect on the average time-factor, since the "Capital" released by the invention would be invested elsewhere and "Capital per head" left unchanged. But Böhm appears sometimes to have held the opposite opinion. In the

as a result of the ensuing crisis. The contraction of the anticipated period in the depression represents perhaps the abandonment of some processes begun, but essentially a temporary halt in the secular accumulation of capital. After a long depression a shortening of the completed period is likely, for time-saving invention will continue and the capital "released" remain uninvested; and after a long period of investment activity it may be expected to expand. But short-term changes in this "period" are neither an essential condition nor even a characteristic feature of industrial fluctuations.

## IV

In accordance with Böhm-Bawerk's propositions, Prof. Hayek identifies a short-term contraction of the period of production during a depression with a transition to less capitalistic (or less roundabout) methods (or processes) of production and also with a decline in "capital per head."

It is generally agreed that the actual methods or processes by which commodities are continuously being produced show scarcely any tendency to become more direct during a depression. Prof. Hayek would maintain, however, that "a transition to less roundabout methods" refers to the disposal of resources and not to the methods of production in the ordinary sense of the term. In the depression, the investment of resources in "long" processes declines and consequently the proportion of total resources employed on "short" processes rises.[1] Production is thus said to become less roundabout even if there be no change in the technique of production.

With the onset of a depression there will be a loss of capital per head in several senses. Fixed capital will fall in value owing to the decline in prospective quasi-rents.[2] Part of this fixed

*Positive Theorie*, Exkurs, I, p. 6, for example, he points to the undisputed fact of a secular increase in capital per head not only as proof of a secular lengthening of the period, but also as an argument for the greater frequency of time-increasing than time-saving inventions.

[1] A decline in the Investment period will, of course, be accompanied by a corresponding change in the time structure of intermediate goods, or, in Prof. Hayek's terminology, in the "Structure of Production"; for circulating capital and the labour working it up are turned into commodities at the same time. But owing to the existence of fixed capital, the structure of production will not contract as rapidly as the anticipated production period. The average time in which existing specific capital-goods (roads and bridges, locomotives, factories and so forth) "pass into consumers' goods" is not likely to change appreciably over a short period.

[2] Prof. Hayek writes: "The best-equipped factory . . . can suddenly lose its value as a result of changes in the price-structure and *thus cease to be capital.*" Article on "Capital Consumption," *Weltwirtschaftliches Archiv*, Bd. 36, 1932.

capital will lose its "economic significance" in consequence of misdirection of capital in the boom period, and may suffer physical deterioration through failure to make normal replacement. There will be a contraction of "free capital" or the "subsistence fund." But that there will be a loss in capital per head in the sense of a decrease in the proportion of past labour co-operating with present labour would seem to be very doubtful. How a decline in capital in this sense could be measured I do not pretend to know—the conception is, indeed, rather obscure—but it is conceivable that the common-sense criterion—namely, in terms of the physical capital equipment of the labour in employment—would be least incompatible with Böhm-Bawerk's general reasoning.[1]

To speak of a transition to less capitalistic methods when actual technological methods remain the same and of a loss of capital when capital equipment is unimpaired and capital is defined as the physical "aggregate of intermediate goods," might be criticised as a perverse use of terms. This usage can, of course, be derived from the *Positive Theorie:* it is nevertheless misleading and its justification questionable.

In the conditions assumed by Böhm-Bawerk these dichotomies do not exist; a lengthening of the "period" means greater roundaboutness both of existing methods and of methods initiated; more capital per head, both more past labour and more "subsistence fund." To use only one of the two meanings which each of these concepts bears in the short-period is to suggest relationships which do not exist.

Böhm's concepts were not intended for use in short-period analysis nor do they seem to lend themselves to it. Böhm considers only the secular process of capital-accumulation and never discusses the complex implications of capital loss. He elaborates his argument on the assumption of equilibrium conditions and then

According to the Austrian view this loss in value is followed inevitably by a physical deterioration, for it will not be profitable to maintain the old amortisation quotas (see Schiff, *Kapitalbildung und Kapitalaufzehrung*, Vienna 1933). It is this physical deterioration rather than the loss in value which is held to constitute "Capital consumption" in the long and medium run. But in the short run, a loss in the value of fixed capital may well be accompanied by maintenance of amortisation quotas at the old scale; and from one crisis to another it is true to say of the great bulk of fixed capital that its value is mislaid rather than lost. This problem of the short-run measure of fixed capital, which is obscured by the neglect of a consistent distinction between different forms of capital, has not yet been dealt with satisfactorily.

[1] This is, I think, supported by his views referred to below regarding the effect of a forcible increase in wages on "Capital per head" and the period of production.

argues, at great length though not always convincingly,[1] that the conclusions reached tally roughly with the long-run phenomena of real life. Whether or not this claim is justified is immaterial to the present argument; what is of importance is the fact that the only form of capital increase which Böhm considered—namely, a greater roundaboutness of production due to the shift in the time-distribution of a given supply of resources—would seem to have little direct relevance to that which is characteristic of a normal trade-cycle "boom," in which unused resources are absorbed and technical improvements introduced. Finally, Böhm considers only the relationship between successive positions of equilibrium. The economics of transition find no place in his system. Distinctions such as those which I have drawn above—between completed period and anticipated period, processes in operation and processes begun—were of no interest to him. It is this above all that renders any attempt to apply his concepts to the study of short-run fluctuations inevitably confusing.

## V

It would seem to be impossible not only to fit the phenomena of the trade-cycle within the categories of the theory of capital, but also to predict the reaction of "capital per head" or the time-factor[2] to any disturbance which upsets equilibrium. To the relatively simple question how the average production period normally behaves in the event of wages being held or forced above their equilibrium level, Böhm-Bawerk and Prof. Hayek give diametrically opposite replies. Böhm-Bawerk[3] considered that uneconomically high wages lead to the *lengthening* of the "period," as entrepreneurs are driven to employ fewer men and more machines, thereby increasing capital per person employed. Prof Hayek,[4] on the other hand, argues that they normally lead to an increase in the relative amount of resources employed in the lower stages

[1] For example, Böhm emphasises the point that more capital leads to greater productivity only when the capital investment is "well chosen"—a statement which is clearly tautological, since "well chosen" can here mean nothing else than "more productive." Cf. Birck, article entitled "Moderne Scholastik" in *Weltwirtschaftliches Archiv*, Bd. 24, 1926.

[2] The distinction between anticipated and completed periods is here irrelevant.

[3] Article entitled "Macht oder Oekonomisches Gesetz?" in the *Zeitschrift für Volkswirtschaft, Sozialpolitik und Verwaltung*, Bd. XXIII, 1914. Wicksell was of the same opinion (*Finanztheoretische Untersuchungen*, p. 27). That capital per head tends to increase when a rise in wages makes capital cheap in comparison with labour was pointed out by Ricardo (*Principles*, I. V.).

[4] Article on "Capital Consumption," *Weltwirtschaftliches Archiv*, Bd. 36, 1932.

of production, and thus to a *shortening* of the "period." It would seem, in fact, that both tendencies are likely to operate, though which will predominate it is impossible to determine *a priori*. The tendency towards "more capital per head" will be offset by a contraction of total production owing to the disturbance of equilibrium, this contraction tending to affect the "higher" industries (the demand for which is derived) more than the "lower." Further, workers thrown out of employment must be maintained; the money required for unemployment relief will, under certain conditions (depending on the elasticity of demand for labour), be drawn from the Subsistence fund.

Thus Capital consumption need not be accompanied by a shortening of the time-factor, for "capital per person employed" need not contract. Similarly, it is doubtful whether short-term fluctuations can be expressed in terms of changes in the time-factor (the anticipated production period), which, though characteristic, do not appear to be essential conditions of such fluctuations.[1] A decline in the relative activity of investment industries might be accompanied by a lengthening of the anticipated period (*e.g.* if a programme of very long-term public works were introduced to offset in part unemployment in "shorter" investment industries, such as shipbuilding and mechanical engineering); again in an investment boom connected with the introduction of capital-saving inventions, the change in the "vertical" distribution of resources between investment and consumption industries might well be offset by a shortening of the "longer" processes.

Prof. Hayek's theory of crises is built up on the basis of a series of *ceteris paribus* propositions which, I have suggested above, would seem to correspond ill with the characteristic conditions of such fluctuations. And even if they were to correspond to those conditions, it would seem rash to draw conclusions from premisses which may be falsified by conscious human action of the kind just mentioned or by imponderable psychological reactions.

## VI

It is impossible to discuss here the significance of Böhm's use of the time-factor or the difficulties which the thesis that the lengthening of the period of production or investment is the normal condition of economic progress inevitably encounters.[2]

[1] This statement is not in contradiction with the thesis that changes in the relative demand for investment and consumption goods are an essential element of trade-cycle fluctuations.

[2] On this point see A. G. B. Fisher, "Capital and the Growth of Knowledge," ECONOMIC JOURNAL, September 1933.

These questions were the subject of much controversy [1] in the generation following the publication of the *Positive Theorie.* Criticism turned partly on misunderstanding (this is true especially of certain Anglo-American critics); but it also arose partly from the defects of the central time-concept itself and from the genuine difficulty of fitting Böhm's highly abstract system to the conditions of real life. For a time, interest in these matters seems to have died down; but two years ago there appeared in the *Weltwirtschaftliches Archiv* an article which represents by far the most thorough and penetrating analysis of Böhm's time-concepts yet published. This article, to which I can add nothing, I will merely refer to here.[2]

A few remarks on the limitations inherent in these time-concepts may, however, be offered.

Böhm uses the production period as an index of the " intensity of capital " or " capital per head "; but the index itself cannot be determined. Even if it were practically possible to discover the times at which the original units of labour which have contributed to the existing stock of capital were applied, there would remain the insoluble theoretical problem—encountered also in the labour theory of value—of establishing the relative contributions made by these units.

Again, the range over which this measure can be applied is strictly limited. The ultimate units of labour on which the period of production depends are not comparable over any considerable intervals of time or as between different places. The average period obtained by digging back into the distant past is in each country partly a historical accident—a country with an old civilisation would have a longer " period " than a new country with an identical industrial structure. A century ago the " average period " represented by a given value of capital (or, to avoid unnecessary difficulties, " structure of production ") would be far greater than to-day.

Wicksell referred to Böhm's period of production as " a rather vague concept and one which cannot even be precisely defined." [3] He uses in preference Jevons's Time of Investment or the invest-

[1] Among the more important criticisms in English were the following: Cassel, *Nature and Necessity of Interest*, London, 1903; Fetter, " The Roundabout Processes in the Theory of Interest," *Quarterly Journal of Economics*, November 1902; Fisher, *The Rate of Interest*, New York, 1907; Davenport, *Value and Distribution*, Chicago, 1908, pp. 189–216; Taussig, " Capital, Interest and Diminishing Returns," *Quarterly Journal of Economics*, May 1908.

[2] F. Burkhardt, *op. cit.*

[3] *Finanztheoretische Untersuchungen*, Jena, 1896, p. 30.

ment period, which is free from such defects. This time-concept, the short-period changes in which are synonymous with changes in the "anticipated production period," nevertheless offers difficulties of its own if used outside the limited field of interest theory. It is by its nature hypothetical, representing an average of anticipations which may not be realised. And its very conception postulates the fiction that the period for which investments are made can be anticipated. But how in fact can one anticipate the period for which miners or farm-labourers, for example, are working when the ultimate distribution of the coal now being raised between industrial and household uses and the age at which the existing stock will be slaughtered are unknown? One must conclude that the best-conceived policy of maintaining the investment period constant would not obviate variation in completed investment periods.

A word may be added regarding the fallibility of the customary statistical criteria of changes in the investment anticipated or production period.

Such changes may imply a redistribution of resources between industries which would be reflected in statistics of employment, output, etc., in the industries concerned. But they may involve merely shifts between longer and shorter processes in the same industry or industries [1] or changes in the period for which certain industries are working, without a change in the absolute or relative amount of resources used. In such cases, the change in the period would not be reflected in statistical series relating to the activity of the industries concerned.

In the case of pronounced long and medium-run fluctuations of the trade-cycle type it may be assumed that the investment period (or anticipated production period) moves in accordance with the customary statistical indexes; but, as pointed out in Section III above, even in the medium-run it is conceivable, and in the very short-run it is quite probable, that no such correlation may exist.

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[1] This point is made by Haberler in his contribution to the Spiethoff Festgabe, *Der Stand und die nächste Zukunft der Konjunkturforschung*, München, 1933, pp. 98, 99.

# THE CONCEPT OF THE LENGTH OF THE PERIOD OF PRODUCTION

IT is now over two years since Mr. Keynes published *A Treatise on Money*; and in that time he has had to face severe criticism and competition from Dr. Hayek, Dr. Haberler, and their friends at the London School of Economics. This paper is intended to provide a background for the alternative theory propounded by Mr. Keynes' critics. In that theory there bulk large the concepts of "the length of the period of production," "the length of the productive process," "more or less round-about methods of production"; but the reader will search in vain for a precise definition of these notions. It is the purpose of this paper to supply his need. It will provide (1) an exact definition of the length of the period of production, (2) a formula for the cost of a commodity in which the length of the period of production appears explicitly, (3) a formula expressing the relationship which holds between the rate of interest and the length of the period of production; and will attempt finally to distinguish between those situations to which the concept can and those to which it cannot usefully be applied.

Certain assumptions and limitations must be set out first.

(*a*) We shall be concerned only with consumers' goods. By these I mean all goods, whatever their durability, which are for the enjoyment of the ultimate consumer, and no others. From this it is a natural corollary that we may abstract from the number of times a commodity changes hands during the process of production, which will be assumed to be completely integrated.

(*b*) I shall assume that the community's property at any time can be reduced to the property existing at any previous time and the organised labour applied to it in the interval; and shall then make the further simplifying assumption that if the previous time be chosen far enough back, the property then existing may be ignored. For it would seem reasonable to suppose that light can be thrown on the economic organisation of a country to-day even if we neglect the wealth possessed by its inhabitants in 1250 B.C. In the language of classical economics, I shall abstract from "land" and replace the concept of "capital" with that of "organisation of labour." As an illustration, the phrase "different proportions of labour and capital" will be superseded by "different organisations of labour." In short, the argument

will be stated in terms more sympathetic to a labour-theory of value than to the classical scheme.

(*c*) Since, as will appear more clearly later, to each organisation of labour corresponds a definite length of the period of production, the latter concept cannot be defined with reference to a progressive community where the organisation of labour is continually changing. The analysis which follows must therefore be interpreted with reference to a community whose technical knowledge remains unchanged though its population need not be constant.

We are now in a position to proceed to our definitions.

(1) For convenience I shall speak of a particular consumers' good, the *Chocolate*.

(2) *A Unit of Labour* is defined as equal to a unit of population (*i.e.*, one man) multiplied by a unit of time. This involves either assuming that all men are equally remunerated for equally valuable work, or else reckoning an entrepreneur who receives $n$ times the remuneration of an unskilled labourer to be equal to $n$ units of population. The reader may choose for himself the construction he prefers. As we have decided to ignore payments for original and indestructible factors of production such as land, the expenses of production can be resolved into payments to labour and the interest on them that accumulates between the time when the payments are made and the time that the article is finished and sold.

(3) $R$ = *The Length of the Period of Production*, and
$L$ = *Total Labour Cost of a Chocolate*
may be defined as follows : [1]

Let $V$ be the number of men working per unit of time at time $t - x$ on a chocolate finished at time $t$. Then we have by definition

$$L = \int_0^\infty V dx \text{ and } R = \frac{\int_0^\infty V x dx}{\int^\infty V dx}$$

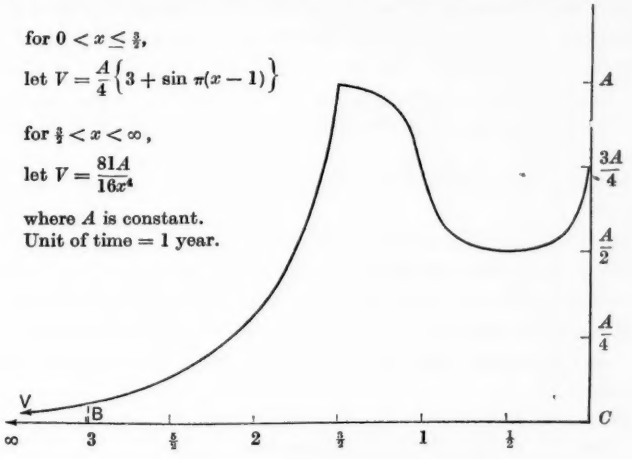
$R$ may thus be described as the " average delay period " between the time when the labour was expended and the time when the finished chocolate emerged from the productive process.[2]

[1] For this definition I am indebted to Professor J. B. S. Haldane.

[2] We have here defined the length of the period of production for a particular commodity. An expression for $R$, the (average) length of the period of production over the whole of industry, can be obtained by constructing a suitable index-number from the values $R_1R_2R_3$ . . . found for the individual commodities. Philosophers who wish to attach some " real meaning " to this construction are likely to be disappointed; but it will have the convenience, as well as the limitations, of any statistical average.

Each value of $V$ represents a particular organisation of labour; and it may be well to add in explanation that if, in a unit of time at time $X$, $B$ men are employed on a machine which helps to make $N$ chocolates, then we regard $\frac{B}{N}$ units of labour as having been expended on each of these chocolates at time $X$.

Since the opinion is widely held among economists that the length of the period of production is a meaningless concept, or at least that, because it depends on a reduction of existing capital to past labour, it must necessarily be infinite, I give here an example of how my definitions work out for a particular value of $V$.




Apart from the discontinuity at $x = \frac{3}{2}$, such a curve would not be wholly unrealistic where production was carried on under conditions of large initial expenditure on fixed capital and high retail costs. $B$ may be thought of as the point when the actual decision to make the chocolate was taken, though labour which would facilitate its production had already been expended. It is justifiable to draw the left-hand portion of the curve as I have done because (*a*) the longer the time since any particular unit of labour was expended the greater the chance that the particular form in which it was embodied (*e.g.*, a machine or factory) will have perished, (*b*) the greater the number of chocolates whose production it will have facilitated, and so the smaller the cost which must be allotted to each one on its account.

Now, $V$ is positive for any finite value of $x$, so that labour expended any finite time ago, however large, does make some

contribution to the finished chocolate. But that does not mean that the length of the period of production must be infinite. Actually, on my definitions we have $L = \frac{A}{8}\left(13 - \frac{2}{\pi}\right)$ and $R$ approximately equal to sixteen months, if we take the unit of time to be a year.[1] The point to be borne in mind is that $R$ is essentially a weighted average, and not a range. It is, however, probable that my $R$ is just half what most economists mean when they speak of the length of the period of production. For if work is begun on a chocolate at time $t - x$ and $\frac{L}{x}$ men are kept steadily at work on it until it is finished at time $t$, then on my definition the length of the period of production (average delay interval) will not be $X$, but $\frac{X}{2}$.

We can now proceed to find a formula for the cost of production of a chocolate.

Let $\omega$ be the cost to the entrepreneur of a chocolate finished at time $t$.

Let $W$ be the time-rate of wages.

Let $I$ be the rate of interest. Simple interest will be assumed; this is both easier to work with and, for all save very large values of $R$, a closer approximation to real life than the assumption of most mathematical economists that interest is continuously compounded.

Then, on account of the $V$ units of labour expended on the chocolate in a unit of time at time $t - x$, the entrepreneur will incur a cost of

$$WV(1 + Ix).$$

We have, therefore,

$$\begin{aligned} \omega &= W\int_0^\infty V dx + WI\int_0^\infty Vx dx \\ &= WL(1 + RI) \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (1) \end{aligned}$$

for by our definitions above

$$\int_0^\infty V dx = L \text{ and } \int_0^\infty Vx dx = LR.$$

But the entrepreneur will always, for any rate of interest,

[1] For $\int_0^{\frac{3}{2}} \frac{A}{4}\{3 + \sin \pi(x - 1)\}dx = \frac{A}{8}\left(9 - \frac{2}{\pi}\right)$ and $\int_{\frac{3}{2}}^\infty \frac{81A}{16x^4} dx = \frac{A}{2}$ while $\int^{\frac{3}{2}} \frac{Ax}{4}\{3 + \sin \pi(x-1)\}dx = \frac{A}{32}\left(27 + \frac{8}{\pi^2}\right)$ and $\int_{\frac{3}{2}}^\infty \frac{81A}{16x^3} dx = \frac{9A}{8}$.

choose that organisation of labour which will minimise his cost; that is, we must have $\frac{\partial \omega}{\partial R} = 0$.

But $$\frac{\partial \omega}{\partial R} = WLI + W\frac{dL}{dR}(1 + RI)$$

and so we have $$\frac{dL}{dR}\ L = -\frac{I}{1 + RI} \quad . \quad . \quad . \quad . \quad (2)$$

This tells us that $\frac{dL}{dR}$ is negative if $I$ is positive—which means that entrepreneurs will not pay a positive rate of interest unless more capitalistic methods of production yield a saving in labour cost—and that its value is small compared with $L$.

But in order that equation (2) shall yield a position of minimum cost, we must also have $\frac{\partial^2 \omega}{\partial R^2}$ positive for $\frac{\partial \omega}{\partial R} = 0$.

But $$\frac{\partial^2 \omega}{\partial R^2} = WI\frac{dL}{dR} + W\frac{dL}{dR}I + W\frac{d^2L}{dR^2}(1 + RI)$$

and for $\frac{\partial \omega}{\partial R} = 0$, $1 + RI = -LI\Big/\frac{dL}{dR}$ from equation (2)

Hence for $$\frac{\partial \omega}{\partial R} = 0, \frac{\partial^2 \omega}{\partial R^2} = WI\Big/\frac{dL}{dR}\left\{2\left(\frac{dL}{dR}\right)^2 - L\frac{d^2L}{dR^2}\right\}.$$

Thus, since $\frac{dL}{dR}$ is negative, $\frac{\partial^2 \omega}{\partial R^2}$ will be positive for $\frac{\partial \omega}{\partial R} = 0$ if

$$L\frac{d^2L}{dR^2} > 2\left(\frac{dL}{dR}\right)^2 \quad . \quad . \quad . \quad . \quad . \quad (3)$$

But this is the condition that the benefits derived from more capitalistic methods of production shall obey a Law of Diminishing Return. For we may regard $\frac{1}{L}$ as a measure of productivity per head. Then the required condition is that $\frac{d^2}{dR^2}\left(\frac{1}{L}\right)$ should be negative.

Now $$\frac{d}{dR}\left(\frac{1}{L}\right) = -\frac{1}{L^2}\frac{dL}{dR}$$

$$\therefore \frac{d^2}{dR^2}\left(\frac{1}{L}\right) = \frac{2}{L^3}\left(\frac{dL}{dR}\right)^2 - \frac{1}{L^2}\frac{d^2L}{dR^2}$$

which is negative when $L\frac{d^2L}{dR^2} > 2\left(\frac{dL}{dR}\right)^2$.

From our fundamental equations we can deduce that, provided the benefits derived from more capitalistic methods of production

obey a law of diminishing return, the lower the rate of interest, the longer will be the period of production $\left(\frac{dR}{dI} \text{ negative}\right)$.

For equation (2) can be rewritten in the form

$$-\frac{1}{I} = L\Big/\frac{dL}{dR} + R.$$

Differentiating this with respect to $R$, we get

$$\frac{1}{I^2}\frac{dI}{dR} = \frac{\left(\frac{dL}{dR}\right)^2 - L\frac{d^2L}{dR^2}}{\left(\frac{dL}{dR}\right)^2} + 1,$$

or

$$\frac{dI}{dR} = \frac{I^2}{\left(\frac{dL}{dR}\right)^2}\left\{2\left(\frac{dL}{dR}\right)^2 - L\frac{d^2L}{dR^2}\right\}$$

which is negative by equation (3).

It will be found also, as we should expect, that the proportionate change in the cost of a commodity due to a change in the rate of interest will be larger the longer its period of production.

For

$$\frac{d\omega}{dI} = \frac{\partial\omega}{\partial I} + \frac{\partial\omega}{\partial R}\cdot\frac{dR}{dI}.$$

But $\frac{\partial\omega}{\partial R} = 0$, and from equation (1) $\frac{\partial\omega}{\partial I} = WLR$,

$$\therefore \frac{d\omega}{dI} = WLR.$$

Thus the change $\delta\omega$ in cost due to a change $\delta I$ in the rate of interest will be equal to $WLR\delta I$. Hence the proportionate change is

$$\frac{WLR\delta I}{WL(1 + RI)}$$

$$= \frac{\delta I}{I + \frac{1}{R}}$$

which increases with $R$.

Thus, provided more capitalistic methods of production yield a saving in labour cost, a fall in the rate of interest will be likely to encourage not only the introduction of more roundabout methods of production, but also a shift of resources to the production of those commodities whose period of production is comparatively long.

Those who are more accustomed to think in terms of

" capital per head " than of the length of the period of production should exercise caution in translating my results into their own language. The term " capital " is capable of bearing more than one meaning, but will here be used as equivalent to those producers' goods and unfinished goods (which for our purposes can all be lumped together as unfinished consumers' goods) which the community possesses. It is then true that the longer the period of production the greater will be capital per head, but the exact relation between them depends on the units in which the latter concept is measured. If in time-labour units so that " the total quantity of capital means, first and foremost, the amount of past labour incorporated in all forms of capital goods," [1] capital per head will, in a stationary community, be equal to the length of the period of production. But if capital is to be measured in money-units, so that it means the total money payments to the factors of production in respect of the community's capital, then, in a stationary state, capital per head will be equal to

$$WR\left[1 + \frac{I}{LR}\int^{\infty} M(x)dx\right];$$ [2]

for allowance must be made for interest as well as for wages.

The difficulty of establishing any simple correspondence between the terminologies for more general conditions arises from the fact that the length of the period of production is a function solely of the way in which industry is organised, whereas even in an unprogressive society the amount of capital per head will depend also on the rate of increase of the population. For the new population (over and above those needed to replace the dead and the superannuated) will for some time be contributing solely to the community's Capital, and not at all to the flow of Consumers' Goods on to the market. And in a progressive community the correspondence fails altogether. For while we may imagine that it would be still possible to measure the volume of capital per head, yet, as we saw above, in a progressive society the organisation of industry is continually changing (that, indeed, is what economic progress necessarily implies), and so to talk

[1] Victor Edelberg, " The Ricardian Theory of Profits," *Economica*, February 1933, p. 54. See the whole article for a full discussion on this point.

[2] The proof of this theorem is too long to be given here. $M(x)$ is the function given by the conditions $M(\infty) = M'(\infty) = O$, $M''(x) = V$, from which it follows that $M(O) = LR$ and $M'(O) = -L$. If we choose that value for $V$ such that work is begun on a chocolate at time $t - 2R$, and $\frac{L}{2R}$ men are kept steadily working on it till it is finished at time $t$, then capital per head will be equal to $WR(1 + \frac{2}{3}RI)$.

about the length of the period of production would, on our definitions, be quite meaningless.

In general, it must always be remembered that the formulæ above were obtained on the assumption that the rate of interest remained unchanged during the production process. They are therefore applicable only to the analysis of equilibrium positions; and are helpful when discussing transition periods merely in so far as it may be well when planning a journey to know both your destination and your starting-point. It has sometimes appeared as though Mr. Keynes were discussing times of change without reference to the positions between which the change was occurring; while his critics have committed the opposite and perhaps more grievous error of assuming that change takes place automatically. Any alteration in the rate of interest tends to cause one organisation of labour to supersede another; and the process is likely to encounter some severe frictions which may have undesirable results. In an unprogressive society the rate of interest would be determined by the community's thrift habits and its law of population growth, and would be extremely unlikely to remain constant long; while in a progressive country the situation would be still further confused by the desire of entrepreneurs to borrow in order to install the latest inventions. Correct theory is more complicated than is generally supposed, for it is probable that business cycles arise out of the natural process of change. It is therefore particularly important that no misunderstanding should arise over the meaning of fundamental concepts.

C. H. P. GIFFORD

# THE ECONOMIC LEGISLATION OF THE 73RD CONGRESS (1ST SESSION),[1] 1933

## I

ONLY a realisation of the extent to which President Roosevelt has cast his lot with the little man—the farmer, the debtor, and the worker—makes the legislation passed by the last (73rd) Congress comprehensible. The plan of the Administration as embodied in the Agricultural Adjustment (Farm) Act and the National Industrial Recovery Act is to raise prices not by an active monetary policy—contrary to popular opinion, monetary policy was to play a passive rôle—but by providing the favoured classes with additional purchasing power. The farmers are the group to benefit from the Farm Act, which proposes to curtail production by taxing consumers twice : once to obtain revenue to reward the farmer for curtailing production, and then by paying the higher prices that follow in the wake of curtailed production. The workers are the group to benefit from the introduction of a high wage policy as provided in the Recovery Act, and through relief expenditures (including public works) as provided in the Recovery and Relief Acts. Inflation, which is usually profitable to the business man, in part because it offers an opportunity to exploit the worker, is now to be a process by which the worker exploits other classes, the anticipation being that prices are not to rise so much as wages or so soon. Higher prices are the final step contemplated, giving the farmers and other debtors additional relief. Another favoured class, the unprotected investor, benefits from the Security Act, which requires full information from those who issue securities and provides for recovery of losses where misleading statements are made and criminal action where fraud is committed; while the small depositor profits from the Banking Act, which favours him as against the large depositor, and, in addition, protects depositors as a group. The Railroad Act (Emergency Railroad Transportation Act, 1933), which might at first sight seem legislation for the benefit of big business, is scarcely that. Although its main purpose is to reduce the cost of operating

[1] This article is part of a larger plan to study the Process of Inflation which I am undertaking with the help of the Harvard University Committee on Research in the Social Sciences.

railroads, its tenor is that wherever there is conflict between economy and the interest of labour, the latter emerges victorious; no action is to be taken, for example, which deprives workers of their jobs or leaves them in a worse position.[1]

For the past few months (May–August, 1933) the Administration has evinced a strong interest in the movement to raise prices. But the Democratic Platform, in proposing a "sound and adequate currency," whatever that phrase may mean, had not been clearly in favour of inflation in 1932; and the Emergency Banking Act, approved early in March 1933, which offered an unparalleled opportunity to stop the decline of prices, was in a sense a bold piece of deflationary legislation, for its administration provided at one stroke for the closing of banks with about 5 billions of deposits, and limitations on withdrawals from other institutions holding perhaps 10 billions more. The economy proposals which followed (again in March) were certainly anything but inflationary in their intent.[2] It is clear that the attitude of the Administration towards inflation was completely altered in a period of about six weeks. Of course, the Emergency Banking Act (An Act to Provide Relief in the Existing National Emergency in Banking and for other Purposes: Public No. 1—approved March 9), in putting the stamp of Governmental approval upon the banks licensed to reopen, and in offering additional facilities for borrowing to these institutions and thus re-establishing confidence in them, was to that extent an inflationary measure. But the Government allowed billions of dollars of deposits to be destroyed when a government guarantee, which would probably have cost comparatively little at that time, could have made possible their

[1] The Railroad Brotherhood put much pressure on Congress to introduce these protective provisions. *U.S. Daily, May 27, to June 3, 1933. Hearings House Interstate and Foreign Commerce* (73 : 1), 1933, pp. 69–74, Public, No. 68—to relieve the existing national emergency in relation to interstate railroad transportation, etc., especially sections 7 (*a, b, c*) and 9.

[2] In House Report No. 1 (Maintenance of Credit of the United States) issued on March 11, 1933, the arguments for the economy proposals are lucidly presented. For the fiscal years 1931–3 the deficits were approximately 4 billions, and the estimated deficit for 1934 promises to be an additional billion unless speedy action is taken. The Committee on Economy unjustifiably points to the increase within a period of several months of the rate on Treasury bills from 1/10 of one per cent. to 4¼ per cent. on March 6, as an indication of the depths to which Government credit had fallen. Of course it was nothing of the kind, but was merely, or very largely, a reflection of the demoralisation caused by the bank holidays. What was particularly worrying the Administration, apparently, was the need of re-financing several billions of securities falling due in the course of the year. It is significant that at this time the Committee argued that substantial retrenchment was necessary to prevent a "vicious uncontrolled inflation."

continued use. In what manner could a few hundred millions have been spent more effectively than by dispelling the doubts current concerning our banks, and thereby infusing activity into 40 billions of deposits? Perhaps even the economy proposals,[1] which required drastic curtailment in government expenditures, may be considered inflationary in their effects, because they strengthened the credit of the Government and thus made possible the issue under favourable conditions of billions of securities required under the recovery programme.[2] Yet it seems rather absurd for the Government to discharge thousands of employees and reduce the pay of the remainder at the same time that it provides relief expenditures and public works to take care of the needy, and even requires of local governments a balanced budget as a condition for obtaining federal funds for public works, and also requires of private industry increased expenditures.

Among the important Acts passed by the 73rd Congress, I shall consider in particular the following. (1) the Banking Act of 1933, Joint Resolution No. 10 (the Abrogation of the Gold Clause), (2) the Agricultural Adjustment Act, (3) The National Industrial Recovery Act, (4) The Emergency Transportation Act of 1933, and (5) the Security Act.

Certain other Acts of some importance cannot be dismissed without a few remarks. Public No. 3 (to provide revenue by taxation of certain non-intoxicating liquor, and for other purposes), Public No. 5 (for the relief of unemployment through the performance of useful public work, and for other purposes—the forestry public works legislation), Public No. 15 (Federal Emergency Relief Act of 1933), Public No. 30 (for the establishment of a national employment system and for co-operation with the states), and Public No. 17 (to improve the navigability and provide for the flood control of the Tennessee River; to provide for reforestation and the proper use of marginal lands in the Tennessee Valley; to provide for the agricultural and industrial development of said valley, etc.)—these may all be considered together, being all part of the programme for increasing employment. The Beer Act

[1] Public No. 2, 73rd Congress, An Act to Maintain the Credit of the United States Government (approved March 16, 1933). Also see Public Nos. 77 and 78 (the Fourth Deficiency Act and the Independent Offices Appropriation Act, both approved on June 16) and House Report No. 61 on *Independent Offices Appropriation Bill* (73 : 1), approved May 21, 1933.

[2] The President justified his economy proposals on the grounds that it was necessary to borrow large sums, and, therefore, the re-establishment of confidence in government finances was necessary.

Hearings House Banking and Currency Committee (73 : 1), *Unemployment Relief*, p. 78.

(No. 3) is in its effects similar to public works, for it tends to encourage enterprise by a public measure which stimulates consumption, and therefore employment; and this measure is especially effective, because the consumption can only be satisfied through the construction of new plant and the production of new supplies of consumers' goods. The Forestry measure is clearly one for increasing employment through public works in a manner quite effective in view of the expenditures involved.[1] The Tennessee Project (Muscle Shoals) is both a public work and at the same time an attempt to compete with private enterprise; part of the additional gain in employment may be at the expense of reducing employment in private fertiliser and public utility companies.

The Relief Act (No. 15) appropriated 500 millions for the purpose of extending direct relief to states. Sponsors of this legislation supported it on humanitarian grounds, not because of the possible effects on the volume of purchasing power, prices and the like. Its opponents emphasised the strain on the borrowing powers of the Government, the unfairness of requiring some sections of the country to subsidise others and the folly of converting the R.F.C. from a lending to a spending agency, thus giving a misleading impression of the budgetary situation, and usurping the authority of the Appropriation Committee of the House.[2]

## II

The Banking Act of 1933 is one of the most important laws passed at the recent session of Congress. But in many respects it is not consistent with the legislative programme of the Administration. Even since 1928 the Federal Reserve System has been held censurable because of its failure to stop the speculative boom of 1928–29. The new Act, largely the work of that stern deflationist, Senator Glass, is deflationary in spirit because it is an attempt to prevent the recurrence of the speculative boom of 1927–29; but the passage of time, which has considerably dulled the fear of inflation, has also contributed to the elimination of some of the harsh deflationary provisions embodied in the early drafts of this Bill.[3] The Act is at once an avowal of dissatisfaction with the manner in which the Federal Reserve Act has operated in recent years and at the same time an echo of the radical Bryan

[1] House Report No. 13 (73 : 1) on *Unemployment Relief*, especially pp. 1–2.

[2] Hearings House Committee on Banking and Currency (73 : 1) *Unemployment Relief*, especially pp. 7–11, 17–18, 23–6, 44–9, 77–8; also see House Report No. 46 and 46*a* on *Unemployment Relief*.

[3] Earlier versions of this Bill are discussed in S. E. Harris . . . *Twenty Years of Federal Reserve Policy*, Chapter XLIII.

element in the Democratic Party which in 1913 clamoured for (1) a guarantee of bank deposits, (2) a strong and powerful central board at the head of the System, representing the interests of the public, and (3) the encouragement of commercial as against speculative banking.[1]

The guarantee of bank deposits, a plan to which Senator Glass was anything but sympathetic, was added at a relatively late stage; this part of the Act has aroused the greatest interest in the United States as well as the most violent protests. The law provides for the formation of a corporation which is to insure the deposits of all banks that qualify as to their present capacity to meet all obligations, its *initial* capital to be provided roughly in equal parts by the Government, the participating banks and the Federal Reserve banks. Temporarily the non-member banks, if they meet the test of solvency, are eligible to subscribe to the capital of this corporation; but it is hoped that the result of excluding non-members ultimately will be to drive them into the System, thus improving the standards of banking in the country. The guarantee proviso is the important addition to the earlier drafts, and one consistent with the programme of the Administration. The remainder of the Act follows, with the deflationary features somewhat diluted, the Bill that Senator Glass had tried for several years to have enacted.

Like the farm allotment plan, the deposit guarantee helps in particular the farmers and the industries subsidiary to farming in the West and South. Bad banking for the most part has been indigenous to the South and West; the numerous bank failures in those parts of the country have been the result not only of the unfortunate decline in prices of farm products, but also of the excessive number of banks and their loose practices. With the decline of agricultural prices stopped, we may hope that one obstacle to normal banking in farm communities has been removed; but it is too much to anticipate that a guarantee of deposits, in removing one of the most important checks on bad banking, will improve the quality of banking in these sections of the country. If bank failures continue to be relatively frequent in agricultural sections, the other sections will pay the cost of this experiment because their banks are generally sounder.

That the weak should be made stronger by making the strong weaker is not particularly desirable in banking. That was made abundantly clear in the weeks preceding the bank crisis of March,

[1] Senate Report No 77 (73 : 1) on *Operation of National and Federal Reserve Banking Systems*, especially pp. 3–5, 11–12.

when the continued support of banking institutions in the economically weak sections of the country led to a continuous movement of cash to these sections, with the result that the stronger banks there accumulated large surpluses of cash which they redeposited in the East; and later, when epidemics of bank failures broke out in the West and South, these banks, by withdrawing cash deposited in Eastern institutions, forced the banks in the East to close. Furthermore, open-market operations, unless they are on a fantastic scale, cannot strengthen the weak banks losing deposits (cash), sufficiently to prevent large numbers of failures; and long before they attain the objective of stopping failures and re-establishing confidence other banks located in the distressed areas find themselves with embarrassingly large amounts of cash. Direct advances by the Reconstruction Finance Corporation or the reserve banks are a more justifiable method of meeting this particular situation; but, on the other hand, the process of borrowing by the R.F.C. drains the strong banks in the East of their cash, and thus causes additional trouble, since the securities sold by the R.F.C. are sold largely to Eastern subscribers, where the wealth is largely concentrated.

Not only is the East forced to pay a disproportionate part of the expenses of this experiment, but the protection offered the depositors of Eastern banks under the guarantee established in the Banking Act is less than that offered to depositors in general. Deposits up to 10,000 dollars are fully insured; but a large depositor can have his first 10,000 dollars insured fully, the next 40,000 dollars insured 75 per cent. and the remainder 50 per cent.

Here again the farmers and the small depositors are given support rather than the large depositors, who are more largely concentrated in the East. The result of this provision is likely to be a movement of deposits to smaller banks, for depositors, in order to get the maximum protection, will divide their accounts among numerous banks; thus, withdrawals of deposits will be suffered by those banks that have been especially successful in protecting their depositors.

Numerous provisions in the Act are obviously attempts to guard against a recurrence of the speculative madness preceding the collapse of 1929. During most of the period when speculation was rampant the reserve authorities took the position that it was possible to identify the dollars borrowed from the reserve banks, and therefore they could demand that the banks should refrain from making speculative loans while indebted to reserve banks; but in the Act now under consideration the extreme position is

taken that the authority of reserve banks extends to the control of the entire investment policy of the member banks regardless of the source from which funds are obtained. A large part of the Act is devoted to the problem of eradicating abuses that have crept into our banking system as a result of the increasing control by holding companies of banks and the frequent affiliation of banks with security companies.[1]

Throughout the Banking Act of 1933, large additional powers are bestowed upon the Federal Reserve Board; thus the political control of the System, which has from the very beginning tended to grow, is strengthened, for the Board is the link with Congress and, through the Secretary of the Treasury and the Comptroller of the Currency, with the Administration. It may be added, however, that the authority of the Treasury is reduced in some respects. In addition to the increased authority over the speculative use of credit, the control by the Board of open-market operations is considerably increased. The Board is to make recommendations concerning open-market operations and is to approve the decisions of the Open-Market Committee, the reorganisation of which in 1929–30 (now given the sanction of law) was a blow to the prestige of the New York Reserve Bank as well as a reprimand for having initiated the disastrous open-market operations of 1927. The objective of open-market operations is also clearly defined in the Act, for the first time. And, lastly, the Board, in order to prevent agreements similar to those entered into with foreign central banks in 1927, is given absolute control over such negotiations.

In these various provisions—to protect the small depositor and in particular the small banks, to help the farm sections, to reduce the prestige of the New York Bank and the reserve banks in general, to make more difficult agreements with foreign banks and to preserve the banking resources of the country for the commercial and agricultural rather than speculative or investment purposes—the supporters of the Banking Act of 1933 adhere to the broad lines of policy of the Democratic party. A nationalistic policy is assured; political control of the System, be it to assure the success of the inflationary provisions in the Farm Act or to prevent a recurrence of a stock market boom, is also provided for. On the other hand, the deflationary features seem incompatible with the rest of the Roosevelt programme. Yet, it may be argued, that in so far as the Act imposes checks on inflation, it serves to prevent an orgy of inflation such as is followed by a

[1] Senate Report No. 77, pp. 10–12.

prolonged period of falling prices: inflation would not now be necessary if deflation had not followed the inflation of 1927–29.

## III

The joint resolution by which Congress abrogated the gold clause in past contracts and prohibits its use in future contracts, Public Resolution No. 10 (approved June 5, 1933),[1] is consistent both with the concern that the administration has steadfastly shown for the debtor classes, with the solicitude of the President for a balanced Budget, and with the expressed desire to raise prices. Long-term obligations in the United States quite generally contain a provision calling for payments in gold dollars of a specified weight and fineness. The possibility of devaluation, the actuality of a premium on gold and the restrictions on its use called, it seemed to the Administration, for some action to protect debtors. This resolution by legalising the payment dollar for dollar in paper dollars on obligations stipulating payment in gold dollars reduces the demand for money required to meet payments of debt, and thus is consistent with the declared intention of Congress to reduce the value of the dollar. In passing this legislation, Congress had declared that it was necessary to abrogate the gold clause in order to exercise its constitutional prerogative of borrowing for the performance of necessary functions and of regulating the value of money and of fulfilling its declared policy of reducing the value of the dollar. If securities issued in the past were redeemable in gold, an issue of new securities by the U.S. Treasury payable in paper dollars would encounter difficulties. Congress could not divest itself of its sovereign rights to legislate in the interest of the public merely because contracts had been made in the past by the Government which, though consistent with the public interest when made, were no longer so; and the Constitution does not prohibit the violation of contracts by Congress.[2]

[1] The attitude of Congress is found in Public Resolution Nos. 10–73*d*. Congress (H. J. Res. 192, Joint Resolution to assure the uniform value to the coins and currencies of the United States) and from the Senate Report (No. 99) on S. J. Resolution 56 and House Report (No. 169) on H. J. Resolution 192.

[2] House Report No. 169: "These gold clauses render ineffective the power of the Government to create a currency and determine the value thereof. . . . In the light of this situation, two phenomena which have developed during the present emergency make the enforcement of the gold clauses incompatible with the public interest. The first is the tendency which has developed internally to hoard gold; the second is the tendency for capital to leave the country. . . .

"There can be no substantial question as to the constitutional power of the Congress to make this legislation applicable to all obligations, public and private,

## IV

The Agricultural Adjustment Act, which was approved by the President on May 12, 1933, is of the first importance. It is " an Act to relieve the existing national economic emergency by increasing agricultural purchasing power, to raise revenue for extraordinary expenses incurred by reason of such emergency, to provide emergency relief with respect to agricultural indebtedness, to provide for the orderly liquidation of joint stock banks, and for other purposes." It is declared " that the present acute economic emergency being in part the consequence of a severe and increasing disparity between the prices of agricultural and other commodities, which disparity has largely destroyed the purchasing power of farmers for industrial products," the enactment of title I of the Act, the object of which is to raise farm prices to their pre-War parity, is declared imperative. Also, it is the declared policy of Congress " to establish and maintain such balance between the production and consumption of agricultural commodities, and such marketing conditions therefor, as will re-establish prices to farmers at a level that will give agricultural commodities a purchasing power with respect to articles that farmers buy, equivalent to the purchasing power in the base period." The base period is defined for most commodities to be August 1909 to July 1914. It is stipulated, however, in the same section (2) that the correction is to be effected *gradually*, having in mind the current consumptive demand. Finally, the consumer's interest is to be protected " by readjusting farm production at such level as will not increase the percentage of the consumer's retail expenditures for agricultural commodities, or products derived therefrom, which is returned to the farmer, above the percentage which was returned to the farmer in the pre-War period, August 1909 to July 1914."

The first title of the A.A. Act, which aims to raise the prices received by farmers, is quite consistent with the desire of the Administration to raise prices, and particularly to improve the status of the farmer. The legislation may in some respects be

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both past and future. The power of Congress to issue a currency and determine the value thereof and to provide for the borrowing of funds by the Government is express and undoubted. Contracts of private individuals, past or future, are valid and enforceable only in so far as they do not conflict with public policy as enumerated by Congress in the exercise of its constitutional powers. . . . Nor does the fact that outstanding obligations of the Government are expressed as payable in gold *coin* impose a limitation, under the circumstances obtaining, upon the exercise of powers conferred by the Constitution."

justified by the use of the same arguments that would justify a programme of public works financed by borrowing: it is an attempt to transfer purchasing power from those who have been hit relatively little by the depression, to the farmers who have suffered severely; it is an attempt, or may be so construed, to transfer money from those who have it and won't spend it to those who would almost certainly spend it if they had it.[1] Therefore both on social and economic grounds the parity plan may be justified in so far as the relatively well off are thus adversely affected in the first instance. But one qualification is necessary at this point, namely, that an important part of the additional receipts thus received by the farmers may not be spent on consumption goods at all or even for capital goods, but would make it possible for the farmers to meet their obligations on mortgages and to some extent on taxes. In so far as payments on mortgages are thus increased, the initial effect would merely be to release funds of insurance companies and other holders of mortgages, which, though these released funds may ultimately provide industry with additional funds, for the time being may have the effect of taking money away from potential consumers of goods and giving it to farm creditors who might use it merely to strengthen their cash position or bid up the price of gilt-edge securities. But I hasten to add that to the extent that farmers are kept on the farms by stopping foreclosures, the results are more beneficial than they appear at this point.

Another relevant consideration is that the farmers and those dependent on subsidiary industries have had their savings and bank deposits reduced to an abnormally low level, partly as a result of the unfavourable conditions of farming and partly (a circumstance closely related to the farm situation) because of the unsatisfactory banking situation. They will, therefore, for many years to come use additional revenues and windfalls not merely to buy commodities and services, but in large part to build up saving accounts, thus at least temporarily withholding funds from the industries of the country, and in so far as funds that otherwise would have been spent are thus diverted to farmers, the unhealthy

[1] The President said of the Bill that it "relates to agriculture and seeks to increase the purchasing power of our farmers and the consumption of articles manufactured in our industrial communities." In making a report on the Bill, the Committee on Agriculture of the House said that "the additional return received by farmers by reason of the operation of the Bill will be money promptly spent by the farmer in ways that will decrease unemployment and add to the profits of business." House Report No. 6 (73 : 1)—*Relieve the Existing National Economic Emergency by Increasing the Agricultural Purchasing Power*, pp. 1, 7.

tendency to hoard is intensified. Nor should we leave this aspect of the subject without pointing out that there are 12 millions or thereabouts unemployed (July 1933), and their exploitation can scarcely be justified on social grounds or on the grounds that expenditures will be increased. I do not hesitate to conclude, however, that expenditures will be increased with the pegging of prices of agricultural commodities, and the results will be evident in a higher price level stimulated to some extent by the resulting creations of credit.

The proposition, easily understood by the farmer, that the prices he receives to-day for a bushel of wheat or for a bale of cotton ought to be as high in relation to the prices of the commodities that he buys as they were in the relatively normal years preceding the War, has been favourably received by him; and because a programme to raise prices to pre-War parity is more easily applied than are proposals for raising prices to some other level, it appeals to him. Furthermore, the Department of Agriculture has not bothered with difficult theoretical problems such as allowing for the important changes in the budget of the farmer in the last twenty years, nor has it been made entirely clear whether they are interested in establishing parity in relation to the commodities that the farmers buy as a producer or those that he buys as a consumer: there are two distinct problems here. (The index used is based on the prices of commodities used by farmers both as producers and consumers.) It will do the farmer little good if he is favoured as a consumer if the relative level of prices for his crops and costs is such that he receives no net income. So far as I can discover, the authorities have merely estimated the relative movement of prices of agricultural and non-agricultural commodities, and thus concluded, for example, that wheat ought to sell for 90 cents to-day if it is to sell for the same price in relation to the commodities purchased by farmers as in 1909–14.[1]

While the Farm Bill was under consideration, much discussion centred round the question whether the attainment of prices equal to costs, or pre-War parity should be the objective of the farm legislation. If farmers receive a price in relation to the pre-War price for their products that corresponds to the prices of the commodities (in relation to the pre-War level) that they buy, would their costs be met? This depends partly upon the manner

[1] Thus Secretary of Agriculture Wallace says that the cost of what the farmer buys is 104 per cent. of the pre-War level and therefore the price of cotton ought to be 104 per cent. of its pre-War price. Hearings. Senate Committee on Agriculture and Forestry (73 : 1) on the *Agricultural Emergency Act*, p. 25.

in which pre-War parity is calculated. If a wholesale price index is used, this does not necessarily follow, because important costs, such as railroad services, taxes, labour, capital, are not considered, or are considered inadequately in the wholesale price index, and, in addition, the cost of manufacturing receives inadequate attention. So far as I can find out, the price of labour and taxes are not considered in computing the index of what the farmer buys. Improvements have been especially prominent in the manufacturing branches, and therefore, in having the prices of farm products adjusted to pre-War parity, the farmers obtain the advantage of prices artificially raised to the level of non-farm products (as compared with the pre-War level), although the index for the latter has been kept up by the non-inclusion or neglect of numerous products that have especially profited from recent technological advances. Thus we may say, in so far as this consideration is relevant, that the farmer obtains more than the full advantage of the gains made by other industries.

Not alone costs, but also demand must be taken into account in solving the problem; that is perhaps the explanation of the unwillingness of Mr. Wallace to concentrate on costs. He admits that the problem is to squeeze the consumer as much as possible,[1] and it is recognised that even parity may not be obtained speedily, for higher prices discourage purchases. In the Act it is even stipulated that the prices of many commodities competing with the basic agricultural commodities may be raised to prevent a diversion of purchasing power to these markets; [2] and even then, it may be added, the final result may be a relatively small increase in the prices of agricultural commodities in general and in the competing products, and also some curtailment of production and consumption all along the line—the results depending partly on the behaviour of the banks.

The supporters of the Agricultural Adjustment Act were not unaware of the possibility that the consumer may be unable or unwilling to pay the processing tax. Thus section 9 (*b*) provides that though the tax as a rule is to be at a rate which corresponds to the difference between the current price and the fair exchange value of the commodity, whenever the imposition of a tax at that rate results in the accumulation of stocks or a reduction of prices of farm products, the rate of tax shall be reduced. Furthermore, the tax may be refunded where its imposition curtails the

[1] Cf. *ibid.*, p. 139; cf. pp. 110–11, 123. The argument is presented that a price equal to costs ought to be guaranteed rather than pre-War parity.

[2] Cf. *ibid.*, p. 304.

consumption of the commodity, that is, particular consumers may be exempted from the tax when the imposition may result in the accumulation of surpluses and a substantial reduction of consumption (section 15*a*). A blanket exemption, of course, is also offered to exporters of the product and articles manufactured thereof, thus making possible the sale of products at a lower price abroad than at home.[1]

In the process of passage, however, the view that the price received by the farmer constituted a small part of the retail price of the finished product, and that therefore a relatively large processing tax was enforceable without a reduction in consumption, was widely held, and played a large part in the passage of the Act. The tax, it was held, would do the farmer much good, and would not be felt by the consumer; in fact, farm leaders time and time again expressed the view that the price of bread, which remains relatively stable as compared to that of wheat, which is traded on a speculative and well-organised market, has nothing to do with the price of the latter.[2] But this position was not universally held. Congress listened to the pleas of various farm groups who pleaded for exemption from the *benefits* of a processing tax on the grounds that the consumer could not possibly pay more, and therefore any tax would simply fall upon the producer, resulting in unsold supplies.[3] In one important provision this difficulty was recognised: whenever the imposition of a tax diverts consumption to competing commodities (the Senate Bill contained the provision "*competing commodities*" while the House Bill limited it to "competing *agricultural* commodities"), the authorities might impose a similar tax on these competing commodities.

The second title is devoted to the problem of refinancing of farm mortgages and also to providing new financing; the epidemic of foreclosures, actual and threatened, has made this legislation necessary.[4] Section 21 provides that Federal land banks may

[1] Nor will foreigners be pleased with the intention of the Administration to enter into marketing agreements in order to dispose of surplus stocks abroad. *Ibid.*, p. 10.

[2] *Ibid.*, pp. 131, 179; also see House Report No. 6 (73 : 1), p. 7; Hearings Senate on *Agricultural Emergency Act*, p. 204.

[3] *Ibid.*, pp. 152–3, 259–84.

[4] The problem of farm mortgages is fully and lucidly discussed in House Document No. 9—The Farm Debt Problem—Letters from the Secretary of Agriculture of March 27, 1933, especially pp. 1–2, 11, 16, 25, 31–38.

The farm mortgage debt was 3·3 billions in 1910 and 8·5 in 1933. Land values (1912–14 base) were 170 in 1920, 115 in 1930, and 89 in 1932. Gross income from crops and livestock was 17 billions in 1919, 11–12 billions from 1923 to 1929, 9·3 billions in 1930 and 5 billions in 1932. The ratio of mortgages

issue two billions of farm loan bonds guaranteed by the Government as to interest only if they cannot issue bonds not guaranteed at a rate of 4 per cent. It is hoped that mortgage-holders will be willing to accept these bonds in exchange for their mortgages when mortgagors are unable to make required payments, the advantage to the mortgagee being the receipt of a government bond with interest guaranteed in exchange for a doubtful mortgage; the advantage to the farmer being a reduction of interest and in some instances a scaling down of the principal.

## V

Sections 43–46 of the Farm Act contain the much-discussed inflationary measures (Thomas Amendments) inserted in the Bill under authority of section 8 of article 1 of the constitution which gives Congress the authority to coin money and regulate the value thereof. (The abrogation of the Gold Clause already discussed was not enacted until later.)

Congress contemplated the possibility of (1) a competitive devaluation or depreciation to capture foreign markets, (2) a resumption of convertibility into gold of paper dollars, which resumption might require a reduction in the gold content of the dollar if issues remain excessive in view of the attitude of the public, and monetary needs, (3) inflation in response to the demands of farmers and other inflationists, and finally (4) an international agreement to inflate and then devaluate.

Whenever any of certain conditions are found by the President to exist, he is authorised (*a*) to enter into negotiations with the Federal reserve banks and the Board to undertake open market operations and, in addition, the reserve banks are to agree to purchase a maximum of 3 billions of U.S. securities directly from the Government, (*b*) to issue 3 billions of greenbacks for the purpose of redeeming government securities, (*c*) to fix the weight of the gold and the silver dollar and to fix the ratio between the two and to allow the unlimited coinage at this ratio, and (*d*) to enter into agreements with foreign governments under which the relation between the value of gold and other currency issued by the U.S. and by such governments is established: the President

to value of mortgaged farms was 27 and 40 per cent. in the years 1910 and 1930 respectively. Income available to meet fixed charges (mortgages and taxes) has fallen even more than gross income, as might be expected from the decline in agricultural as compared to other prices. Difficulties encountered by farm credit agencies in selling bonds, both because of the unsettled conditions in the bond market and the decline of agricultural prices, have intensified the pressure for foreclosures and reduced the volume of new financing.

may fix the weight of the dollar (gold) in accordance with such agreements, but he is not to reduce the weight of the gold dollar more than 50 per cent.

Some aspects of this legislation may be noted at this point. The Federal Reserve Board is virtually told that it must take orders from the Secretary of the Treasury. Should this inflationary movement go too far, the reserve *banks*, in an unprecedented manner, are deprived of their autonomy, for the Federal Reserve Board, with the approval of the Secretary of the Treasury, may *require* the reserve banks to take any action deemed necessary to contend with inflation. Furthermore, the Federal Reserve Board may, with the approval of the President, declare that an emergency exists by virtue of the credit expansion, and may then in its discretion increase or decrease the reserves required against deposits of member banks. (The last appears in section 46.) It should also be pointed out that the unlimited coinage of silver at a fixed ratio to gold can only be invoked for the purpose of stabilising prices or protecting the foreign commerce of the country—the decision to be at the discretion of the President.

Devaluation or the issue of greenbacks is invoked only if the powers under (*a*) (above) are inadequate to achieve the objects of this legislation or the reserve banks prove to be recalcitrant. It is now (September 1933) 4 months since this legislation was passed early in May, and in that period only moderate purchases of securities have been made by the reserve banks, and yet we have witnessed a sensational rise in prices. It seems unlikely that these powers will have to be used to any large degree unless the Treasury finds that the sale of billions of dollars of securities on the open market tends to raise rates too much, or inflationist sentiment becomes more powerful.[1] Issues of 3 billions of securities to the reserve banks would, following the expenditure of the money by the Treasury (and in the absence of offsetting movements), more than double the reserves of the member banks; under the favourable conditions of the midsummer of 1933, the threat of purchase of a maximum of 3 billions securities may be adequate. If undertaken, the results of these measures would depend largely on the manner in which the Government spent the money thus received. Greenbacks, if issued, would merely find their way back to the banks, thus contributing to an increase of their reserves; and if they are emitted, as contemplated, merely

[1] The above was written in August, 1933. Inflationist sentiment is now (late September) stronger. Cf. the concluding pages of this article.

to buy up securities, their issue may not have the inflationary effects desired [1]; for an increase in reserves may not be adequate. Devaluation, also, would be a method of making larger reserves available, and if the conditions were favourable, more expansion would be made possible; but if the provisions under (*a*) failed to bring inflation, then little could be expected of devaluation: the success of the open-market operations, however, might be made doubly sure by the introduction of devaluation, because an opportunity for inflation would be offered to other countries not so well supplied with gold as is the United States, and, therefore, international complications might not jeopardise the success of the attempts to inflate, and, also, the possibility of devaluation might have a desired psychological effect.

## VI

The object of the next Act under consideration, the National Industrial Recovery Act, is to encourage national industrial recovery, to foster fair competition, and to provide for the construction of certain useful public works, and for other purposes.[2]

To increase purchasing power in order to stimulate the

[1] That issues are to be made for the purpose of purchasing U.S. Securities is partly to be explained by the opinion widely held that banks would be forced to lend more liberally to industry if the supply of government securities or the profitableness of investment in them were reduced—cf. Senate Report No. 77, *Operation of National and Federal Reserve Banking Systems*, p. 7.

[2] The origins of title I of this Act are not difficult to trace. In Senate Report No. 14 (*Preventing Interstate Commerce in Articles Manufactured by Labour Employed More Than Five Days per Week or Six Hours per Day—issued March* 13, 1933), the germs of this legislation are to be found. "Their millions of industrial workers without jobs cannot buy goods that make up our interstate commerce. . . . The channels of interstate commerce are dried up throughout the country, because men without jobs cannot buy. It is manifest to all who squarely face the facts that our economic structure cannot be rehabilitated until our people can work at fair wages, and thus buy the things that they need. It is also self-evident that we can produce all we can sell at home and in foreign markets on a shorter workweek and workday than we have in force to-day."

In April and May, 1933, the House Committee of Labour held lengthy hearings on the Thirty-Hour-Week Bill. An examination of the testimony of Miss Perkins, Mr. Swope and Mr. Harriman, President of the United States Chamber of Commerce, reveals the origins of some of the additional features of this legislation. In particular, minimum prices, controlling the rate of production and a partnership between labour and industry, were proposed. The House Report (No. 124 on *The Thirty-Hour Week*, issued May 10, 1933) emphasised the need of protecting employers who pay decent wages from the competition of greedy entrepreneurs as well as from the anti-trust laws. Also, the need of protecting American business against low cost products of foreigners was strongly put.

Also consult Hearings on *National Industrial Recovery* before the House Committee on Ways and Means (May 18–20, 1933).—See especially the evidence of Douglas, Green, Harriman, and Richberg.

consumption of agricultural and industrial products is apparently the main object sought. Yet an increase of consumption and purchasing power is impossible without increased production. (We may neglect the possibility of depending on accumulated stocks.) Nowhere in the Act do we find any provisions for the increase of production; but numerous provisions, in particular those that relate to maximum hours, the elimination of unfair competition and the like, the introduction of federal control of the oil industry and the assertion of precedence of the Agricultural Adjustment Act where there is a conflict, the possibility of imposing high tariffs—all these point in the direction of curtailment of production or supply. The provisions "to avoid *undue* restrictions of production except as may be temporarily required"; and the pledge "to promote the fullest possible utilisation of *present* productive capacity of industries," do not carry much promise of a high volume of production; and some of the early codes proposed under this Act give every indication of restriction of output. Under the Industrial Recovery Act the Administration proposes to raise hourly wages by cutting the number of working hours and yet maintaining a respectable weekly wage. If there were any doubts on the attitude of the Administration towards restriction of production and high-wage policy, they have certainly been dispelled by the public statements of the President and the actions of General Johnson, appointed by the President as Administrator under title I of the Act.

Entrepreneurs cannot pay a higher wage per hour of work when costs are already too high for profitable enterprise unless they are compensated in some other manner. If the reduction of hours is large, there may be an appreciable gain in the work accomplished in an hour by the employee; but this gain is to be offset by the loss involved in hiring additional workers presumably less efficient than those displaced, in response to the current share-the-work campaign; and also by the losses involved in a general reduction of the working week in so far as it contributes to a less intensive use of plant and machinery, and possibly additional and uneconomic expenditures for both. Also where there will be a gain of efficiency of large proportions, the hourly wage has probably been increased by a large amount. The conclusion at this point is that the entrepreneur can expect little benefit from these sources to offset the losses involved in paying higher wages per hour.

Behind the efforts of the President and his supporters to raise wages lies the theory that depression has been caused by

the failure of the working classes to receive an adequate share of the national dividend. As General Johnson has said in one of his recent addresses, the millionaire cannot buy 40 dollars worth of ham and eggs; the way out of the depression is to make it possible for each individual to buy 50 cents worth of ham and eggs. Certainly there seems to be more in this argument frequently expounded by Marxists and others, when depression is in our midst and improvements have been proceeding at a rapid pace, than has generally been accorded it in the past by *orthodox* economists. The Cambridge School, and in particular Mr. Keynes and Mr. Robertson, who have directed our attention to the necessity of increasing expenditures, have contributed much to the recent change in attitude of economists toward the relative virtues of saving and spending.

One very significant point may be introduced in support of the Administration's programme. A concerted movement to add new employees not only to share the work of those already employed, but *also* to undertake additional production, if successful, may well have important results; but the clash of this policy with the restrictive aspects of this legislation and its administration has been commented on. The demand for the products of industries in general may increase and also additional economies of large-scale production may be introduced if the concerted movement to increase employment is successful; and these economies may be of a more enduring type than usual if the introduction of new plant and machinery is controlled as planned in numerous codes. Thus let us assume that in each industry monetary wages are increased per unit of output by 25 per cent., a change wrought by paying the same weekly wage for a working week reduced by 33 per cent., the workers' efficiency being increased somewhat. Also let us suppose that each employer agrees to increase his staff by 50 per cent., so that the national wage bill is increased correspondingly. Production therefore rises by approximately 20 per cent.; each worker now produces 80 per cent. as much as before, although his working week has been reduced by one third; and the number of workers has been increased by one half. The increase in production also probably reduces fixed costs, and thus may encourage additional production; but this is left out of account, as is the possibility that other factors of production may not be available in sufficient quantities to make possible this additional production.

Thus workers will have more money to spend, because the

wage bill will be higher by 50 per cent. It is apparent that the worker is not likely to gain to the extent of 50 per cent., for production will increase by but 20 per cent. or perhaps a little more, and their gains are limited to that percentage plus what can be squeezed out of other classes. Need we add that the gain to employment will be reduced in so far as the additional purchasing power is absorbed in higher prices or depletion of stocks? Apparently there is no reason why prices should rise as much as wages, for though wages are an important element in costs, they are not the only element, and therefore an increase in efficiency wages of 25 per cent., if we allow for the proportion of wages to total costs and allow for other economies introduced, may make necessary an increase in prices of but 10 per cent. Thus, because all consumers, including the capitalist class, the Government, the entrepreneur, professional people, etc., are charged higher prices, and because a saving is effected by spreading fixed costs over a larger output, the entrepreneur need increase prices by but 10 per cent. It is to be emphasised that, whatever we may think of the social desirability of redistributing income from the wealthy to the poor, there is no net gain, in so far as the consumers who are not members of the working classes have to pay higher prices for commodities because wages have been increased; the only economic gains result from this transfer in so far as the transfer means that money is put into the hands of those prepared to spend, *i.e.*, the working classes, and taken from those who will not spend, thus increasing production and employment; and from the resulting economies to be associated with additional expenditures, if made.

Higher prices (if not induced through a curtailment of production) are a favourable development because they reduce the proportion of the national income required to meet the indebtedness of industry, and therefore to that extent costs are reduced, and, perhaps, they are welcome because they are symptomatic of additional expenditures (not as yet offset by a corresponding increase in production); but an important gain, a lag in wages, generally available to the entrepreneur when prices rise, is not to be had under the programme of the Roosevelt Administration. Also, it is frequently forgotten that the very act of depriving the creditor classes in this manner also has the disadvantage of involving a reduction of the volume of their purchases, and as the volume of dividends, profits and interest payments continues to decline, the increase of expenditures resulting from transfers of purchasing power to the poor becomes less important.

No industry could now (autumn of 1933) afford to increase its staff of workers (and hours of employment) by 20–50 per cent. unless the movement, under official direction, were made quite general; government interference might well then produce revolutionary results. The newly employed in industry A would buy the products of the newly employed in industry B, and the widespread increase in production would contribute to a reduction in non-labour costs. But the Government can be successful in increasing working hours in this manner only if the high wage policy is not carried to a point where the banks and the entrepreneurs are discouraged by the increased labour costs, anticipating inadequate relief from the reduction of other costs; if total costs are inflated as a result of the high-wage policy, then the entrepreneurs must under present conditions charge higher prices, with the result that the additional purchasing power is absorbed in higher prices, thus discouraging any additional output to that extent; if the banks are sufficiently sceptical of the high-wage policy, the demand for the products of industry will suffer, and the total purchasing power received may decline, because, as a result of the non-co-operative policy of the banks, consumers do not receive the means to pay the higher prices. Any gains to be associated with higher prices will then be offset by the losses resulting from the payment of higher wages and from a reduced volume of sales, or sales at the former level of prices will be unprofitable because costs have been increased and sales have not been increased adequately. The public may be unwilling or unable to pay higher prices (even the wage-earners may save), although the banks are liberal in extending credit, or the banks may be niggardly because they anticipate that the public, discouraged by higher prices, may not spend adequately to assure satisfactory business conditions.

It is evident that much depends on the price and production policies of entrepreneurs, on the attitude of the banks and consumers, and on the distribution of purchases between domestic and foreign markets. The enhancement of the wage-level may do harm in so far as additional purchases abroad are stimulated.

We must conclude that there may be some wisdom in the National Industrial Recovery Act: when more men are put to work and produce additional goods, a larger national income is available for distribution; and this holds whether the mechanism is a concerted movement sponsored by the Government to employ more men in private industry or whether the plan is a large programme of public works as provided in title II of this Act.

Perhaps the objection may be raised against the latter, that the construction of roads, public buildings, improvements of harbours and the like do not in the first instance provide the workers with the food, clothing and services that they so badly need; for the newly employed and those now paid higher wages draw on available supplies of consumption goods, and therefore contribute towards higher prices. Thus the programme of public works will not provide those formerly unemployed with so large a volume of goods as a plan which would immediately set men to work on the goods that they require. Would it not be preferable to invest these funds in food or manufacturing industries which will immediately provide the goods sorely needed, rather than in expenditures on roads and the like which may provide over-capitalised construction firms and political henchmen with a large proportion of the new purchasing power and provide the country with roads instead of shoes? Perhaps I have put this point too firmly in a period when accumulated stocks are not small and proposals to make work are not easy of realisation.

Another aspect of this question deserves a moment's consideration. Any policy that reduces savings and retards the mad pace of improvements deserves serious consideration; and, for that reason, any policy that dries up to some extent the sources from which are derived most savings, namely, profits and interest, has something to recommend it. Although a general policy of curtailing production is to be condemned, one that aims to control production at the same time that it tends to encourage consumption, while the discrepancies between the two are further demoralising production, may in truth be a policy that in the long run will stimulate both production and consumption.

In the recent years of expansion, improvements have been introduced altogether too fast; entrepreneurs have not sufficiently allowed for the fact that the advance of science that had made possible new plants, and even new industries, would soon make possible newer plants and products that would catch the fancy of the public anew. In other words, had business men, when confronted with the problem of substituting new plant or machinery or undertaking the management of new industries, gauged accurately the future rate of improvements, they would have had to plan larger obsolescence funds that they have been accustomed to accumulate; and, therefore, plan to charge higher prices for the products manufactured in the new manner or for the new products than they have actually charged, thus reducing the advantage of new industries and plant and enhancing the value

of the old—the pace of change would have been slowed up. We may admit, however, that the rapid scrapping of plant, in stimulating employment in industries manufacturing capital goods, may postpone the depression that will ultimately ensue from the failure to increase consumption rapidly enough when improvements are unusually numerous. Although this is good enough as a palliative, it is only a palliative, for ultimately, when the rapid pace of production in machine industries and the like is reflected in excessive production of consumer goods, the result is bound to be even more disastrous. Where innovation tends to proceed rapidly, industry must be prepared to write down new plant much more quickly than it has in the past, partly by charging higher prices and partly by paying smaller dividends; and also industry must bid less eagerly for new capital, thus cutting down the rate of interest. Paradoxically enough, one may argue to this extent that prices were not too high in the inflation period, but too low; and also that Americans, who have generally been praised for accumulating generous obsolescence funds, have in truth been lax in this matter. Railroads thus might be criticised for paying excessive dividends and borrowing at excessive rates, instead of writing down their plant; and refrigeration companies, on the other hand, might be criticised not for charging 100 dollars for a refrigerator that might be manufactured for 25 dollars, but for their failure to use the profits to write down their capital investments. If the rate of improvement is thus controlled, the result will be a nicer adjustment of consumption to production, an improvement in the standard of living, gradual rather than by leaps and bounds, and an improvement in what are now periods of depression which ought more than to offset the disadvantages of postponing improvements. More energies will then be given to producing consumers' goods in periods of rising activity, rather than in producing capital goods which soon will have to be scrapped.

## VII

In title II of the National Industrial Recovery Act, 3·3 billions are appropriated for public works. In making the unprecedented appropriation for this purpose, the Administration is perhaps tacitly expressing some doubts concerning the success of the measures introduced in title I to bring the desired improvement in trade and industry; it therefore becomes necessary for the Government to increase employment by direct measures which will increase employment both directly and indirectly in a manner

that has been very well explained by Mr. Kahn. But in so far as the additional funds spent are diverted to foreign channels, additional employment is conferred upon foreigners and, what is more, an unfavourable balance of payments may put a stop to such measures. American delegates who have urged upon their colleagues at the London Economic Conference of 1933 a programme of public works for all countries are well advised, although the danger of pursuing a lone policy along these lines is not so dangerous for the United States as it would be for some other large countries, both because Americans spend a relatively small proportion of their income on foreign products, and because unemployed factors of production and accumulated liquid and working capital are unprecedently large in the United States, thus assuring a large increase in production without the usual rise in prices. Furthermore, an additional check is provided in the unusual and highly protectionist provision in title I which requires that the President take strong measures, even up to the point of establishing quotas, if foreign products are imported in "*substantial* quantities or in increasing proportion to the domestic production," thus interfering with the fulfilment of the purposes of title I. Whether the occasion of the additional imports is the higher wages and prices resulting from the enforcement of title I or the construction of public works under title II, need not in practice be a concern of the authorities.

In April and early May hearings were being held in the Senate for the purpose of amending the Emergency and Construction Act of 1932.[1] At these hearings many of the proposals for public works later incorporated in the National Industrial Recovery Act were suggested. These hearings also proved to be a rare opportunity for protectionist sentiment to express itself, and not without support in official circles. It was urged that if the Government would raise the necessary capital and lend it in turn to private industry, we could develop in particular potash and wood pulp industries, thus freeing us from the necessity of importing these products from abroad. Such propaganda may well be expected, because protection and public works both aim to encourage employment through subsidies to industry; one test of success in both instances is what is done to employment, and the payment of wages above the economic worth of the service rendered is not considered so important as the anticipated increase of national income and employment resulting from putting the unemployed

[1] Hearings Senate Sub-Committee of Banking and Currency (73 : 1), *To Amend the Emergency and Construction Act of* 1932, pp. 18–24, 33–40.

back to work. Of course we cannot be so certain that protection will increase employment (and especially income), since it has adverse effects on export industries, although in encouraging costly methods of production, it stimulates employment. Perhaps more is to be said for the proposals of the supporters of new wood pulp and potash industries than can frequently be said for protectionist arguments. The artificial stimulation of a new industry, in particular one in which we may not do so badly, may be considered to-day in somewhat the same light as a public work. Unemployed factors of production are unusually plentiful, the relation between export and import trade is not nearly so close as it is under normal conditions, and a country in a position to raise large sums of money by tapping the market for government securities may stimulate investment and employment in a manner open to but few countries.

Title II, like the Emergency Construction Act of July 1932, is an acknowledgment that monetary measures in themselves will accomplish little; it is necessary to take money from those who will not spend it and turn it over to potential spenders, *i.e.*, public bodies and beneficiaries of their disbursements. The Cambridge School of Economists has made these principles public knowledge, and though they have not exercised much influence in their own country, Senator Wagner, who more than anybody else was responsible for the public works programme, acknowledges his indebtedness to them. Even a very large bond issue, such as the one now under consideration, will probably help the bond market more by increasing the funds that potential investors are willing to turn over to potential borrowers (and hence spenders), following the resulting rise in prices and demand for products, than it will suffer from the tendency towards higher rates to be associated with the new demands for funds by public bodies. Furthermore, when the programme is financed by a tax programme which provides both for interest and amortisation, so that fears of budgetary inflation are dispelled, the beneficial effects are doubly assured.

## VIII

The attitude of the Administration towards many of the important economic issues is very well revealed in the Emergency Railroad Transportation Act of 1933 (approved June 16, 1933). Railroads, unlike agriculture and industry, have received in recent years a relatively stable price for the commodities that they sell, and as late as 1931 they were granted a material increase in

freight rates. Thus, while agriculture, because of its failure to adjust production to changed conditions of demand, has been forced to make large concessions in prices, and industry has tried to solve its problems both by price concessions and reduction of production, the railroads have been content to take their losses in the reduction of traffic, and this despite the fact that they sell a perishable commodity.[1] The result has been glaring discrepancies in the movement of railroad rates and the prices of the commodities that the farmers and industrialists sell. Farmers in particular, who have observed that the railroad charges absorb a larger and larger part of the Chicago price of their products, a price that has been declining drastically, protested at the sluggishness in the movement of railroad rates.[2] Thus, they argue that either price concessions to consumers of farm products are not large enough to tempt the consumer or benefits accrue largely to the railroads and not to the producers. The Interstate Commerce Commission has been holding hearings to determine whether, if a reduction in rates were allowed, the railroads would be compensated by increased traffic.[3] Important issues are raised, for the question of property rights of the owners of the railroads arises if the rates should be reduced, and as a result the returns on the capital invested in the railroads were further reduced. On the other hand, it is held by the shippers that the Supreme Court has agreed that the cost of service rendered should not be more than what the service is worth, and the cost is excessive when the movement of traffic is hampered.[4]

The Act now under consideration pays some attention to the problem of rates, and provision is made not only to cut operating expenses, but also to reduce fixed charges. At first it was suggested that the Co-ordinator should not approve loans from the

[1] According to one expert, revenue per ton mile was 100 in the base period 1913 and 143 in 1932. The price level was 100 in 1913 and 92 in 1932. The prices of agricultural products were 100 in 1913 and 66 in 1932. (Hearings House Committee on Interstate and Foreign Commerce, 73 : 1) on *Emergency Railroad Transportation Act*, 1933, pp. 156, 217.

[2] In the decision rendered on August 5, however, the I.C.C. pointed out that freight rates (not including the increase which lapses on September 30) are approximately 20 per cent. below those of 1920. Cf. Hearings Senate on *Agricultural Emergency Act*, pp. 85–86.

[3] The I.C.C. has rendered a decision (August 5) in which the application for a reduction was refused (*New York Times*, August 6). It was held that the reduction would not increase traffic much and would not help other industries so much as it would jeopardise the railroad industry by causing wholesale reorganisations.

[4] Hearings House Committee on *Emergency Railroad Transportation Act*, 1933, pp. 54, 63; also see Hearings Senate Committee on Interstate Commerce on *Recapture Clause* (73 : 1), p. 38.

R.F.C. if it were not likely that the railroads could weather the storm during the present emergency without financial aid.[1] How long will the present emergency last, and who can tell whether the roads will be able to weather the emergency? The practical effect of this provision, which was considerably changed in the course of passage, are likely to be a discouragement of further loans to railroads.[2]

The primary aim of this Act has been to make it possible to introduce economies in the operation of the railroads.[3] Estimates of the economies possible have been very vague, and on the whole not of any value; there has been general agreement that economies would be made largely by reducing the number of jobs available. It is therefore not surprising that the labour interests led by Mr. Richberg have fought the Bill vigorously, and have succeeded in having inserted provisions in the Act which safeguard the position of labour and make any important economies next to impossible.[4]

There is a great deal to be said for the attitude of railway employees, who have witnessed in recent years a decline in the number employed in the railroad industry of approximately 50 per cent., and even in the relatively quiet decade before 1930, a reduction in the number of employees of approximately 200,000, although the amount of business remained relatively stable in the years 1922–9. The explanation is in part that large economies were introduced. Mr. Richberg argues that the return on 6–7 billions additional invested in the railroads since 1920 just about equalled the pay of the 200,000 workers dismissed from 1920 to 1929, and therefore he implies that the economies were non-existent, and what really occurred was a transfer of income from the labouring classes to the capitalists.[5] I am not sure that the

[1] The Senate Committee is extremely critical of the practice of making loans to railroads through the R.F.C. when their bonds were selling at low prices, without those railroads being compelled to reduce their capital structure and protect their net earnings. (Senate Report, No. 87.)

[2] Cf. Hearings (House) on *Emergency Railroad Transportation Act*, 1933, pp. 20, 53–5, 285–6. Eastman of the I.C.C. (and now Co-ordinator) and Thom, a representative of the railroads, were aware of the need of a revision of this provision. Cf. section 15 of the Act with section 14 of the original Bill.

[3] *Ibid.*, pp. 32–3; cf. Senate Report No. 87, on the Emergency Transportation Act.

[4] *Ibid.*, especially 69, 85, 103–4, 109, and the summary of the Act below, section 7. Senate Report, No. 87.

[5] Hearings (House) on *Emergency Railroad Transportation Act*, 1933, pp. 57, 85–6, 182. Richberg takes the following from the House investigation of the six-hour day :—

| | 1916. | 1930. |
|---|---|---|
| 1. Revenue tons per hour for all employees except general and division offices . . . . . | 97 | 141 |
| 2 Gross ton-miles per freight train hour . . . . | 14,877 | 26,702 |

view ably presented by Mr. Eastman, that the transportation industry is a competing industry, and therefore must set its house in order and reduce waste just as the Government has attempted to do by reducing costs, is an adequate reply to the Railroad Brotherhood.[1]

Mr. Richberg argues that there is no place to which dismissed workers can go when unemployment is widespread, and they therefore will become public charges. If full employment is the objective of our economic life, as Mr. Richberg claims, then the uneconomic and costly methods of producing commodities may have more to recommend them than is generally accorded them. Artificially high costs, whether induced by the militant labour policy or by tariffs or anything else, may be justified on these grounds. But, in addition, the national income may be increased by keeping these men employed rather than by putting them on the streets, even though their contributions are not quite so large as their pay. It may be desirable for these reasons to keep workers employed even if as a result capital interests suffer, so long as we are aware of what is being done and are content to go to the Government or the banks (under compulsion) for the capital which will be needed in the future. We are then, we might say, imposing a large capital levy on those who have invested in railroads, and to some extent on the public generally; perhaps this policy is justified in this emergency, and the railroads will profit from the resulting increase in expenditures. But we must not expect the public to continue to lend to railroads in the future.

In yielding to the pressure of organised labour, the Administration, even if it has taken the edge off the transportation legislation, has at least been consistent: its policy has been both to stimulate expenditure and to squeeze capital.[2] But although the policies of high wages and maintenance of employment and expenditures are furthered in the Transportation Act, it cannot be defended so easily as can the public works programme as a means of stimulating employment and expenditures.

## IX

The last Act that I discuss herein is the Securities Act of 1933 (Public No. 22, an Act to provide full and fair disclosure of the character of securities sold in interstate and foreign commerce

[1] Hearings (House) on *Emergency Railroad Transportation Act*, 1933, pp. 50–3.

[2] Richberg quite properly points to the clash of the general policy of inflation and expenditure with that of deflation and contraction for the railroad industry. *Ibid.*, p. 70.

and through the mails, and to prevent frauds in the sale thereof, and for other purposes). Essentially it is an attempt to protect the public against misleading and dishonest action of promoters, issuers and underwriters by providing for full publicity.[1] The Act is based largely on the British Companies Act, the Taylor Bill introduced in 1919 to cope with the speculative excesses of that period and the Martin Act of New York State.[2] Information on almost every conceivable detail as to income and properties and capital accounts, purposes of issues, terms of issues, considerations paid to promoters and others, high salaries paid in company issuing, is demanded.[3] Sections 11 and 12 make directors and others who sign registration statements, prospectuses and communications relative to their sale responsible severally and jointly if any investor loses money because he has been misled by a false statement or by the absence of a material statement which makes the registration blanks, etc., misleading. The person acquiring such security may sue either at law or equity.

What is the significance of this legislation? The requirement of full and accurate information may well discourage the issue of securities to some extent, and in particular of speculative securities; the provision making directors and others responsible for losses incurred because the information has not been adequate or accurate ought to have similar effects.[4] When artificial restoratives are necessary to re-establish normal conditions in the investment market, more criticism than usual may be offered against any action that tends to restrain investment. Misstatements and fraud have certainly been too prevalent, and the interest of Congress in this legislation can be traced to these abuses and the association of them with the large losses suffered

[1] Almost identical hearings were held by the House Committee on Interstate and Foreign Commerce and the Senate Banking and Currency Committee. The evidence of H. Thompson, who apparently was partly responsible for the original Bill (S 875, H.R. 4314), and Butler of the Department of Commerce, is especially helpful.

[2] Hearings Senate Banking and Currency Committee *Securities Act*, pp. 325–8.

[3] The information required by a competent banker from a borrower is the guide selected. House Report No. 85, on *Federal Supervision of Traffic in Investment Securities in Interstate Commerce*, p. 4.

[4] "The aim is to prevent further exploitation of the public by the sale of unsound, fraudulent, and worthless securities through misrepresentation . . . to bring into productive channels of industry and development capital which has grown timid to the point of hoarding; and to aid in providing employment and restoring buying and consumer power." Senate Report No. 47, on Regulation of Securities.

by investors; but losses can only in small part be traced to such factors.[1]

Perhaps accuracy and fullness of statement would have restrained investors in the speculative period, and therefore have reduced losses later, and thus to some extent diminished the decline of prices which has been the most important cause of the losses suffered. But I am more inclined to take the view that it was only the continuance of the speculative spirit engendered by promoters, banks, underwriters and the like that prevented a spilling of savings (through declining prices caused by an inadequate volume of investment) at an earlier period; in other words, if savings are large and are destined to be spilled in the absence of an equally large volume of investments, it may be preferable to maintain prosperity by stimulating investments, even if part of them are unsound, thus at least increasing the total employment above what it would have been otherwise.

The Act is also quite consistent with the nationalistic policy of the Administration. Of particular importance is the provision in section 6, which requires that the underwriters or agents in the United States must sign, and thus guarantee the accuracy of, the registration statement of any foreign government selling securities in the United States. The agent is also required to furnish full and accurate information of the condition of the borrowing governments, which information, of course, could not be required of the Government directly. These provisions may in the future contribute to a curtailment of foreign borrowing in the United States both by foreign governments and other foreign borrowers who are subjected to the provisions of this Act.

## X

## Conclusion

Higher prices are certainly the most important single aim of the Roosevelt Administration—higher prices that will ease the burden of debts, higher prices that will be induced not so much through an active monetary policy but by giving the favoured groups, the farmers and the workers, additional purchasing power,

[1] Cf. Hearings Senate on *Securities Act*, pp. 211–26.

The House Committee, after referring to the fact that fully one half of the 50 billions of securities floated in the post-War period have proved to be worthless, says: "The flotation of such a mass of essentially fraudulent securities was made possible because of the complete abandonment of many underwriters and dealers in securities of those standards of fair, honest and prudent dealings that should be basic to the encouragement of investment in any enterprise." House Report No. 85, p. 2.

thus distributing the gains rather unevenly and clearly not in the manner of periods of inflation. Despite the inflationary provisions in the Agricultural Adjustment Act and the resolutions on the gold clause, it may well be said that monetary policy has occupied a secondary place in the plans of the administration; the threat of additional creations of money is present, and the facilities to finance a larger outlay for farm products and a higher wage bill, and perhaps a larger volume of production at higher prices, are available; but the monetary policies have received relatively little attention. A redistribution of income in a manner that is harmonious with the administration's attitude towards distribution justice, and one that will stimulate expenditures and, therefore, the activity of deposits, is perhaps a substitute for monetary policy.

To reduce the weight of past debts is a very laudatory object, and who is to deny that the plans of the Administration for raising prices constitute a much more effective manner of doing so than waiting for bankruptcies and receivorships while expenditures and employment are cut more and more in a vain attempt to avoid them? It is also desirable to redistribute the national income in favour of the farmers and the workers, especially because the stimulation of additional expenditures thus induced enhances the national dividend. But there is some evidence that our leaders are disposed to squeeze capital and management to such an extent that unless the Government is prepared to fill the gaps resulting—some discouragement to savings may be desirable—from curtailed savings, and is prepared to take over industry, they may be going too far. As long as we are appealing to the motive power of the quest for profits, we cannot bring on prosperity by introducing a wage policy that makes business less profitable than it was in 1930–33. Therefore let us squeeze the bondholders and the entrepreneurs as well as the holder of common stocks as much as is possible consistent with obtaining the necessary co-operation of capital and management; but no more. Certainly the active policy of Mr. Roosevelt to raise prices by (1) introducing a programme of public works, thus increasing employment simultaneously in this manner as well as by a concerted movement to take on additional workers, and by (2) threatening inflation and being prepared to make his monetary policy the handmaid of his programme for the return of prosperity, is much to be preferred to Mr. Hoover's policy of waiting for bankruptcy and receivorships to bring costs and prices down sufficiently to start the upward movement of prices and

employment. On the other hand, the President's apparent acceptance of the high-wage theory in a rather extreme form, seems to predispose him to coerce business enterprise to submit to an increase in labour costs beyond a point where compensation can be expected from lower non-labour costs per unit of output or may be obtained from higher prices, and raises serious doubts concerning some aspects of his programme.

A recognition of the need for higher prices was also an announcement of the increased importance of a nationalistic policy. The Agricultural Adjustment Act, even in its non-monetary aspects, pointed that way. Foreigners, of course, were not going to be delighted with a plan to cut acreage in cotton that would force them either to do without cotton or pay a higher price for it, and were not to be pleased that bonuses on domestic production might enable Americans to maintain their foreign markets to some extent. Also the theory on which the farm programme is based is that it is much better to give up export markets entirely if necessary, rather than to allow sales abroad of, what is for most crops, a small part of the total, to depress prices. The resulting loss of export trade is bound to induce restrictive measures towards imports. The Agricultural Adjustment Act provides that the Government is to put a compensating tax on imported commodities that suffer a processing tax or on commodities manufactured from those subject to such tax; and it will be recalled that the Secretary of Agriculture may extend the processing tax to all commodities that compete with those subject to the processing tax. The National Industrial Recovery Act goes even further in this direction, by putting upon the President the responsibility of excluding or taxing foreign commodities that hinder the fulfilment of the purposes of title I of the Act. Public works, a high price and wage policy and a subsidy to farmers are bound to harm the competitive position of the United States, even if we allow for the refunds on exports subjected to a processing tax.

Freedom to pursue an independent monetary policy at home also requires greater freedom in the movement of the foreign exchanges than is possible under the gold standard. A higher price level is likely to require a lower valued dollar abroad; but it is possible that the Administration is carrying too far its campaign to reduce the foreign value of the dollar as a means of obtaining undue advantages in foreign markets. On the other hand, one may argue that a greater protection, through depreciation of the exchanges, is needed than that indicated by relative price

and income movements here and abroad, because the first effects of the Farm and Recovery Acts are going to be not only an increase in prices, but also a reduction of exports and a stimulus to imports; but in so far as fiscal policy is likely to be adjusted to these new conditions, less reliance need be placed on exchange depreciation to improve the balance; and if the fiscal policies do not correct the situation, the exchanges will decline without recourse to artificial measures.

Apparently the puzzling problem of the balance of payments of the United States is to be solved partly by higher tariffs abroad, partly by repudiation of foreign debts and, finally, by a discouragement of the export trade of the United States. The legislation of the last session of Congress, by making less effective the most important factors contributing to the success of our export industries—that is, our natural resources and the high efficiency of our workers and management—is bound to have detrimental effects on our export trade. The extent to which it will suffer will depend upon the extent to which our import trade is affected by the increase in domestic purchasing power on the one hand and the protectionist features of this legislation on the other, as well as upon the defaults and tariff policies abroad. Our export industries will suffer, because the effectiveness of labour, management and natural resources especially count in these industries; but the magnitude of the loss to the export trade will be determined by the point at which the line between domestic and export industries is drawn as fixed by the entire set-up in the balance of payments. Thus, a country that has large credits abroad and a large export trade and will not buy foreign products in adequate quantities, or travel abroad, or lend sufficiently, solves the problem of its balance of payments by forcing upon foreigners defaults (of course this is not their only cause) and protectionist policies, and by reducing its export trade by introducing a nationalistic programme.

The prospects late in September are not very cheerful. Attempts to curtail agricultural production through the imposition of processing taxes have not been very successful in raising prices of farm products; and whatever success has been forthcoming in this direction is to be weighed against the losses to the farmers resulting from the higher prices of the commodities purchased by the farmer to be associated with the policies of the N.R.A. administration. Too late now the Administration becomes aware of the fact that when the banks become sceptical of the possibility of pursuing profitable business enterprise, they will not lend.

The Government is now putting pressure upon the banks to lend to industry funds advanced by the R.F.C.; this is an acknowledgment that its policy of higher costs has not so far helped the entrepreneur. True enough, he has not been slow to raise prices to offset the higher costs; but consumers seem to be unable or unwilling to purchase supplies at these higher prices adequate to stimulate production, and (or) the banks and industry are sceptical concerning their capacity to do so.

The Administration has already assumed obligations to issue securities in such volume that it is difficult to envisage their issue without recourse in great measure to the banks. The additional obligations now being considered make the introduction of inflation so much more imminent, as do the increasing demands coming from the farm sections for extreme monetary measures. Undoubtedly the country would have profited from a moderate dose of inflation induced through increased expenditures by public and semi-public bodies had this policy been introduced at an earlier stage; and it has been unfortunate that the energies of the Administration have gone into accelerating the activities of the N.R.A., instead of stimulating the expenditures for public works already voted. The danger now is that the longer the introduction of a policy of inflation is postponed, the larger the dose that will be administered, and the blow to confidence resulting from the N.R.A. is bound to lead to further shocks when other measures of a radical nature are introduced. On the other hand, the slowing up of the activities of the N.R.A. may stimulate the spending activities of the Government; and the increased costs to be associated with the Agricultural and Industrial legislation make the introduction of inflation as a means of reducing costs even more necessary. It is rather significant of the attitude of the banks that, with this improvement of business in the second and third quarters of the year, the volume of transactions financed by the banks has tended to decline; and whatever improvement ensued is to be attributed to the more active use of deposits already available; and the more active use of these deposits has been the result in no small measure of the anticipation of higher prices. The gains of inflation, it may be added, are not likely to be so large as usual, because the present Administration has definitely aligned itself with labour in such a manner that it could not stand by while the employed worker was being exploited through a process of inflation.

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## REVIEWS

*Essays in Biography.* By J. M. KEYNES. (Macmillan. Pp. 318. 7*s.* 6*d.*)

THOUGH charm is by definition undefinable, the fascination of these essays can be readily explained. It is due to the presence in the author, to a quite unusual degree, of a combination of qualities, which is extremely rare and the absence of which accounts for the fact that most biographies make such dull reading. Biography is the art of focussing an epoch and an environment in the story of an individual. First of all, therefore, the biographer must be a personality whose vision of that epoch on environment is worth having and whose temperament is strong enough to vibrate through his pages. Needless to say that there is no lack of *this* quality in these essays. Secondly, the biographer must be thoroughly master of the walks of life and ways of thinking of his hero—the most eminent professor, for instance, is obviously at a disadvantage when writing, say, a life of Prince Metternich. Mr. Keynes, writing on economists, or on politicians whose doings he was able to observe at close quarters, is under no necessity to tax his imagination in order to form an idea of what the psychology of scientific achievement or of political struggle really is. But while most writers with whom he shares this advantage, politicians, *e.g.*, who write lives of politicians, fail to fulfil a third condition of success—Biography, being essentially Art, calls for an artist's hand—Mr. Keynes proves himself to be an artist of very high rank. There are pages in this book every sentence of which is a masterstroke dictated by the highest "Kunstverstand," a term which I have never been able to translate. If we analyse carefully the technique of the impressionist portrait of Georges Clemenceau in the first of the sketches—observe, *e.g.*, the rôle of such elements of the picture as the buckles of Clemenceau's boots—we cannot but conclude that in order to find its equal we would have to look to the summits of epic or dramatic art.

Of the two essays not yet published elsewhere which this volume contains, the one on Malthus is an important contribution to the history of economic thought, besides being a most successful attempt to draw away, with a gentle hand, the curtain

of time and to conjure up a delightful *milieu* of the past so that it lies once more before our eyes. Malthus as an economic theorist—and as distinguished from Malthus the Malthusian—has never had his due. But here he seems to be getting rather more than full measure, some of it by way of a discussion of his anti-saving views, which reads like an *oratio pro domo* of his eminent biographer. We are even led up to the astounding statement: "If only Malthus, instead of Ricardo, had been the parent stem from which nineteenth-century economics proceeded, what a much wiser and richer place the world would be to-day!" Which statement (p. 144) immediately follows a quotation, in which Malthus contends that "a certain proportion of unproductive consumption" is "absolutely and indispensably necessary to call forth the resources of a country." It is, to be sure, not impossible to find an element of sense in this passage, but as it stands it is nevertheless patently wrong. And has not Mr. Keynes himself, in a recent pamphlet of his, been careful to emphasise that *his* anti-saving advice refers to the present situation of practically unlimited productive possibilities? Would he really go so far as to deny that a hundred and twenty years ago such advice, if taken, would have seriously impaired what was to be the greatest economic success in recorded history? There are many other points of theoretical interest in this essay, among others the linking up of Malthus' views on value with the principles of modern short-time analysis, which may well serve to throw new light not only on the history but also on the present problems of economic theory.

Among the other "Lives of Economists" in this volume, we welcome again the Life of Marshall—the gem of its genus, the most brilliant and profound biography of any scientist the present writer ever read, the great monument to the great leader. This portrait is the only "finished" one in the sense that it fully develops, and nowhere merely hints at, all the elements essential to it. Love and labour have been lavished on it. All the powers of the intellectual peer have been put at the disposal of the loyal pupil. Or nearly so: for it is one of the charms of the work that the former does not divest himself of his own attitudes when unfolding those of the Master, and that he, with infinite good taste and feeling, always says so, when, by virtue of his nature or his preferences, he feels unable to accept as a canon some Marshallian method of work or point of view—as, for instance, in the case of Marshall's craving for perfection and resultant reluctance to get himself into print, on which particular

point, however, some sincere admirers of the biographer may well be tempted to expostulate with him, to urge that Marshall's fame would hardly stand higher if he had "plucked the day, flung pamphlets into the wind, written sub-specie temporis" and trusted to accident to achieve immortality (p. 212)—and, incidentally, to appeal to him to reconsider the example of the Teacher who so resolutely refused to give up to the hour what was meant for the centuries.

The great difficulty of a biography like this consists in making one connected whole of its two elements, disposition of a life and exposition of scientific achievements, which are so refractory to being welded together. This difficulty has in this instance been solved in such masterly fashion as to make any commendation inadequate. The exposition of the main body of the Marshallian inheritance in Sections IV, V and VI grows out, organically and without any jerk or break, of the tale of his life up to his appointment to the Cambridge Chair in 1885. The tale goes on. Plenty of little touches help to retain the tenor of the biography. Only the emphasis shifts gradually from personal to scientific fact until we are, at two different points, presented with two lists, referring respectively to money and the general theory of the *Principles*, of what the author considers to be the most important contributions of Marshall towards the improvement of our theoretical apparatus. Gradually the emphasis shifts back again to Marshall's other activities, to his teaching, to some glimpses of his rôle in the daily life of his University, to the house in Madingley Road, in order to turn finally to his latest works and the last losing fight with Time. The oftener one reads this essay, the more one admires it. It is as thus depicted that Marshall and his work will go down to posterity and enter the history of economic thought. The full extent of Marshall's *original* achievement would, to the outside world, including non-pupils most intimately acquainted with his published work, never have been known without this vigorous vindication of his claims, which sometimes rises to incomparable brilliance: [1] Jevons and, by implication, Walras will have to suffer for it—perhaps justly, perhaps only because these Anchises have not had their Aeneas. Yet even an outsider—an outsider who by

[1] Listen, *e.g.*, to: "Jevons saw the kettle boil and cried out with the delighted voice of a child; Marshall too had seen the kettle boil and sat down to build an engine" (p. 188). If there were Jevonians as there are Marshallians, they would—I think rightly—protest. But what a beautiful passage all the same!

training and mentality is not too far removed from Marshall's work, and who in his time also made the pilgrimage to Madingley Road—may testify to the life-likeness of the portrait.[1] Still more he may testify to his conviction that the evaluation of Marshall's work is substantially correct and that the contours are not overdrawn. In one sense he may do so with more confidence than any friend and pupil of Marshall could, who would not be able, and *ought* not to be able, to make quite sure that personal devotion does not influence his vision. One point the outsider would like to add from an unpublished essay of his, in which he tried to define and to explain to himself the nature and extent of Marshall's achievement and influence. No list of results, however complete, exhausts the greatness or accounts for the "aliveness" of his work; what is much more than any or all of them, is that he is constantly though unobtrusively leading on beyond himself—pointing Moses-like into lands in which it was not given to himself to enter.

Less labour and love—though plenty of generous sympathy—has been bestowed on the life of Edgeworth. The author gave good hours to them, but few. And the result is that the statues do not keep the same proportions as the men did or the works do. No attempt has been made to formulate what we owe to the Edgeworth of the theory of Monopoly, International Trade, Taxation and of all those papers, often on points of theoretical detail, which *he* indeed did "fling into the wind," trusting to accident to achieve immortality. Edgeworth the Utilitarian and Edgeworth the Statistician—if this term may be applied without offence to work sparkling with ésprit and revelling in nice points of logic—command the scene. And it must be admitted that it would be difficult indeed, if not impossible, to do justice to England's second great theorist of the 'nineties, who did his best to hide his shining light in a thicket of quotations and quaint circumlocutions. Besides, it is one of the hopeful *presagia* in our field, that efforts do so much converge and that subjective originality is often present where all the evidence points the other way. So it will, probably, never be possible to answer the question, how much of the analytic engine which we attribute to Marshall alone could have been reconstructed

[1] It is as I saw him when I looked at him across his breakfast table in 1907 to tell him: "Professor, after our conversation (about my scientific plans) I feel exactly as I would if I were an indiscreet lover bent on an adventurous marriage and you a benevolent old uncle trying to persuade me to desist." He answered: "And this is as it should be. For if there is anything to it, the uncle will preach in vain."

from Edgeworth's papers had the *Principles* never been written. We would certainly, however, retain in this case the most important of our tools, the indifference-curve.

The last two essays—obituary notices on F. P. Ramsey—together with the handful of quotations from his notes, which so happily supplements them, provide the best possible illustration to some beautiful lines in the preface. Certainly, that young man was a true product of Cambridge at its best—nobody can have any doubt about it who ever met him, which the present writer did but once. In discussion he impressed one curiously like an overgrown two-year-old who misbehaves on the race-course from sheer excess of powers. But this was when he got on philosophical ground; as an economic theorist he had had time already to work himself into polish in spite of very scant acquaintance with the work done outside Cambridge. His two papers, published in 1927 and 1928 in this JOURNAL, stand out in the whole of our literature by virtue of the originality of their approach, of the way, that is, in which he took hold of problems presumably presented to him by others. There is boundless scope for just this faculty in the present state of our science and we may well share Cambridge's mourning for one of her favourite sons.

The first eight essays of the volume, among which the one on Mr. Lloyd George has not been published before, are sketches —not biographies—of politicians, or reviews of books by politicians. A foreigner writing in an economic periodical has double reason to excuse himself from passing any comment except this: if there is anything in the emphasis laid above on the importance of the element of Art in all writing of this kind, such essays must be expected to contain much evidence of autobiographical value. And they do. Quite apart from the interest they have by virtue of their subjects as treated by a master of telling characterisation, they have another because they shed much light on the views and ways of thinking and feeling of the eminent economist who wrote them; those views and habits of thought which perhaps ought not to, but do, influence professional judgment, wherever it outsteps the frontier of the realm of provable theorem. A pleasant hour might be passed in piecing together the author's sociology, social philosophy and politics from the abundant material scattered over these pages. In fact, the present writer added another one to his unpublished essays. The resulting picture was strongly suggestive of John Stuart Mill's views. Not indeed in every particular. Mill might

have disliked some of the implications of the essay on the Villiers connection. But he would have forgiven them on finding, in the essay on Lord Oxford, the term "stupidity" in the neighbourhood of the term "conservative." He might have been saddened by evidence of disbelief in the fundamentals of Utilitarianism, but he would surely have been reconciled by still stronger evidence of firm adherence to its spirit and to some of its most important practical consequences. Philosophical radicalism is obviously not dead as yet—spreading among us as it does its generous hopes for humanity and its stout refusal to see in life but a little intermezzo of irritating nonsense between eternities of death.

JOSEPH A. SCHUMPETER

*The Economics of Imperfect Competition.* By JOAN ROBINSON. (London: Macmillan. 1933. Pp. xii + 352. 18*s*.)

THIS is an interesting and stimulating book. So stimulating, indeed, that there is something one would like to argue about on almost every page. But there are limits to editorial indulgence, and nothing more must be attempted than to indicate broadly its character and contents.

It is written by one of the younger generation of economists, who has worked in close contact with others. For a product of youth it is surprisingly—to a rebel veteran, disappointingly—conservative. Meaning by this, not that there is little new in it—far from it—but that the general approach and, broadly speaking, the method of treatment are on established lines. True, the theory of perfect competition is relegated, as it should be, to the position of a very special, if instructive, special case. That is a welcome and illuminating departure from the conventional method of presentation. But the whole mechanism of analysis, with its cost-curves and receipt-curves, supply-curves and demand-curves, is of the traditional classical type. The originality of the work is to be found, not in any bold and far-reaching innovation, but in its detail.

The whole structure rests on two main supports. (1) A simplified version of the well-known theorem in which Marshall summarised the conditions necessary for equilibrium in an individual firm (*Principles of Economics:* Mathematical Appendix: Note xiv, pp. 846–52). As stated by him, this was (translating symbols into words) that a firm must be turning out each of the various commodities it produces in such a quantity

that, if it slightly increased its output of any one, or any combination, of them by employing more of any agent, or any combination of the agents, of production, the addition to its total costs would be equal to the addition to its total receipts. In the book before us attention is confined to the special case in which each firm produces only one commodity, and it is assumed that every firm is in equilibrium when the industry is, so that the condition then holds good of every firm. (2) A modified version of Prof. Pigou's theorem that, with free competitive entry into an industry, an "equilibrium" firm's average cost of production per unit of output must, when the industry is in equilibrium, be equal to the price of the product (*Economics of Welfare*, 4th ed., pp. 216 and 790 ff.). Here the principal modification is that where a firm, having exceptional advantages for its trade, is able, with the industry in equilibrium, to secure a surplus profit in excess of the minimum required to keep it in that trade, the surplus is treated (except in the case of monopoly) as a "cost" and charged as a fixed overhead in reckoning the cost per unit at which it can provide any given output. By this means, Prof. Pigou's theorem also is made to apply, not only to an "equilibrium" or "representative" or "marginal" firm, but to every firm in the industry. The bringing together of these two theorems, thus adjusted, is the pivot on which a great part of the argument turns. They are illustrated by a system of four plane curves—Prof. Pigou's "average" and "marginal" cost-curves for the individual firm, the "demand-curve" for its output suggested by Marshall and applied by Mr. Sraffa in his path-breaking article (this JOURNAL: December 1926) and its "marginal revenue" curve—a device for depicting the rate at which, for each various output, its total receipts increase with an increase in output which has been used of late by several writers and students. To these are added four curves illustrating the relation between the output of an industry (or firm) and its "cost" in various different senses which may, as was observed in the JOURNAL for June 1928 (pp. 264 and 259, note 4) and is here more fully explained, be attached to this term according as it is, or is not, taken to include the excess earnings which resources specially adapted to a particular trade can obtain over the minimum necessary to secure their services there. Such are the principal "tools" which Mrs. Robinson has collected in her "box" (p. 327) and wields with skill and effect.

They are used most successfully, as it seems to me, in that

part of the book which deals with "monopoly" in the usual sense, *i.e.* in treating cases where there is only one seller (or buyer) of the commodity in question and he can appreciably influence its price by altering the amount he offers (or buys). In this field, the chapter on "Price Discrimination" (pp. 179–202) may perhaps be placed first in order of merit. The argument here is intricate and highly ingenious and in several respects carries the matter a stage beyond the point at which it was left by Prof. Pigou. Next should rank the "comparison of monopoly and competitive output" (Chaps. XI–XIV, pp. 143–76), sections 4 to 6 of Chapter XIV (on "objections to the comparisons") being perhaps the most original and certainly among the most interesting passages in the whole book: the central, and novel, idea running through these chapters is that account must be taken of the monopolist's power to influence the prices of the factors he buys as well as the price of his product—a marriage between the theories of seller's and buyer's monopoly which is happily and fruitfully consummated. Honourable mention should also be made of the full analysis of the tendency to "exploitation" (Chaps. XXV and XXVI), which, though a little meticulous, brings out several important points and includes (pp. 302–4) a very pretty application to the problem of men's and women's wages. It is not possible in a small space to describe, still less to criticise, Mrs. Robinson's conclusions. For, as has been said, their significance lies in their detail—extensions, corrections, modifications of the existing corpus of theory,—an application, here, to a more complicated issue, a sharpening, there, of its precision. It must suffice to say that this part of the book is a definite contribution, in the classical manner, to the pure theory of monopoly.

The part concerned with cases intermediate between monopoly proper and simple competition (to be found mainly in Book III, but also in portions of Books II and VII and elsewhere) is—rather strangely in view of the title—less complete and, to my mind, less satisfactory. This is, I think, partly because some of the circumstances from which abstraction is made throughout are apt to be of more dominant significance in this class of case, partly because in this branch of her work the author has not so consistently resisted the temptation to use a "technique" which is admittedly designed "for studying equilibrium positions" (p. 16) in an attempt to analyse the effects of change (see, in particular, Chap. VII, but cf. also Chaps. IV and V). But it must also be said that there is some tendency here to evade difficulties

instead of facing them and that the handling of one or two leading conceptions (notably that of "normal profit") does not seem altogether secure. Space, however, or the lack of it, again forbids detailed comment.

Some observations may be added on the broad merits of the method adopted, for Mrs. Robinson attaches as much importance to the "technique" she employs as to the results she arrives at.

Terms are defined and assumptions stated more fully and clearly than is common in treatises on economic theory (though the meaning of a "commodity" and the nature of the mysterious factor "entrepreneurship" are left a little vague); the argument is presented cleanly and with notable precision. These are great virtues. The "high degree" of "abstraction" involved by "the very severe simplifying assumptions" and the consequent impossibility of applying the results directly to the "real world" is fully acknowledged; and this is a virtue too (if there are lapses from it here and there in the course of the book, who can throw a stone on that account?). The restoration of "marginal revenue" to its rightful place as the counterpart to "marginal cost" is a definite gain, attested by the number of independent workers who have lately recognised the necessity for it. But was such a large measure of abstraction really required? In some respects, Mrs. Robinson retreats rather than advances on the road "towards the far distant ideal of constructing an analysis which will be capable of solving the problems presented by the real world" (p. 327). There is surely no need at this stage to confine attention to the purely hypothetical case in which each firm produces only one "commodity": nor (after the pioneer work of Marshall) to run away from the fact that firms may expand and contract, rise and fall, without any corresponding change in the output of the whole industry; and the assumption that the quantity of the "entrepreneur" factor in each firm is fixed (so long as it remains in business) and requires a reward which is independent of the amount of its output seems quite gratuitous. No doubt, the first of these hypotheses makes diagrammatic treatment easier; and diagrams are prominent throughout, so much so that the book might almost be called an essay in geometrical political economy. But if we are to move forward towards the "distant ideal," has not the time come when we must leave our diagrams behind—useful though they have been (and still are pedagogically) for elucidating some broad, fundamental ideas? Even if the subject-matter is suitable for mathematical handling (which is open to question), are plane curves

adequate for the purpose? It is significant that Mrs. Robinson has been obliged to "call in the assistance of a mathematician to provide certain proofs" based on the calculus of variations (p. 12), and that for one of the more complicated problems which "finally yielded to geometrical treatment," "difficulties" had to be "cleared from the ground" by "analysis" also supplied by a professional mathematician (p. 190); and it seems unlikely *à priori* that an instrument adapted to deal with functions of one variable only will prove supple and refined enough to be of much avail in tracing or displaying the immensely complicated network of mutually dependent influences which is encountered as we approach nearer to our real problems. One would have been glad, too (still with an eye on the "distant ideal"), to have found in the work of this young economist some attempt to supply the more glaring defects of the classical analysis:—to face, for example, rather than to ignore the facts that cost is not uniquely determined by output, that the supply and demand schedules (or curves) are not fully independent, and other similar difficulties; and above all to develop a technique capable of determining and forecasting the effects of change instead of elaborating the conditions required for stationary equilibrium. For it is a radical weakness in curves of the classical tradition (and in the new ones here introduced) that they can properly be used only to describe a particular situation and that we cannot, in general, trace or illustrate the effects of a change or departure from the given situation by moving along them (a similar limitation applies, of course, to the analysis which lies behind them). And they are therefore inapplicable to the greater part of the problems encountered on our march. But it is ill complaining, when we have been given so much, that we have not been given something more or different: it is no criticism of the book before us to say that it is not another book. One minor blemish in the manner of presentation should, however, be noticed. The author is too prone to attribute fallacies to other writers on insufficient grounds. Mr. J. R. Hicks (p. 97), Prof. Taussig (p. 155) and Marshall (pp. 49, 155, 168) are, for example, all treated in this way. G. F. SHOVE

*The Theory of Monopolistic Competition.* By EDWARD CHAMBERLIN. Published Cambridge, Harvard University Press, 1933. Pp. x + 213. 14*s*.

PROFESSOR CHAMBERLIN has produced an important and interesting work on a branch of theory which is still in its early stages.

It has recently come to be realised more and more clearly that the concepts of competition and monopoly do not cover the whole economic field, that there is an intermediate area of great importance, probably of greater importance than the areas of pure monopoly and pure competition, and that, in order to analyse the phenomena belonging to this area, something more is required than the mere statement that it is intermediate. Professor Chamberlin has made a notable contribution towards the provision of suitable weapons of attack, and he argues for the need for such weapons with vehemence and conclusiveness. Indeed, it is to be hoped that we have already reached the time when even elementary expositions of economic principles will recognise three branches in the theory of value, pure competition, monopolistic competition (if that is the best name for it) and pure monopoly. And it is not improbable that the importance of the first and third of these except as expository devices will steadily dwindle.

This work has the great merits of clarity and brevity. It is amply illustrated with well-conceived diagrams. And, subject to two criticisms which will be advanced below, it appears to the reviewer to be in its main lines correct. In handling his subject Professor Chamberlain has sought by precision and thoroughness to elucidate and articulate the principal problems in a way most helpful to workers in this field; it still remains for a master mind (perhaps that mind will be Professor Chamberlin's !) to introduce a greater measure of unity, to construct some apparatus by which it will be possible to demonstrate the various special laws as springing from a single simple principle. Reference has already been made to the need for textbook treatment; it would not be possible to set out the fundamental doctrine of his book within the compass of a single chapter or lecture without leaving out what is essential or descending to the mere vagueness from which it is so desirable to escape.

Professor Chamberlin breaks up his topic in the following way. In one section he treats duopoly and oligopoly, in which fewness of competitors is postulated but all other monopolistic attributes, such as price and product differentation and selling costs, are excluded. He then proceeds to a section on price and product differentiation, assuming first that the number of competitors is large and then that it is small. Finally he has a section on selling costs and compares his results with those achieved in the earlier sections.

In his chapter on oligopoly he passes the famous theories of this subject in review. There is necessarily an old-fashioned

flavour in this part, from which Professor Chamberlin's own contribution is not altogether free. He sets out to show that conflicting results have been due to the authors' adoption of alternative assumptions. His own conclusion is that if an oligopolist takes into account all the effects direct and indirect of a change of policy on his own part, the resultant output of all the oligopolists will be equal to the output of pure monopoly. On these assumptions, namely those appropriate to pure competition except for fewness of competitors, there is no gradual transition from monopoly to competition, but a sudden break at the point at which the individual ceases to think that his own change will have any effect at all on the actions of others. "There is no gradual descent to a purely competitive price with increase of numbers. . . . The break comes when the individual's influence upon price becomes so small that he neglects it." (p. 48.) If he takes cognisance at all, we are right back at the purely monopolistic output; but if he takes no cognisance, output is at the competitive level. But under a separate sub-heading Professor Chamberlin makes allowance for "uncertainty" about what the competitors will do.

On the face of it, this result seems rather unnatural. It is well to pause to consider it, for the problem of oligopoly is not completely transcended in the later sections. On the contrary, it lives on; when all other monopolistic factors are introduced, the distinction remains between the equilibrium when the number of monopolistic competitors is large, and that when it is small and they behave oligopolistically, taking account of the indirect effect of their actions on those of all competitors.

It is rash to enter unwarily into this notoriously difficult and treacherous territory. It may, however, be worth making one suggestion. Why do theorisers on this subject always assume productive costs to be nil? Is it the legacy of Cournot's mineral springs? Some cost curve is usually required in the general theory of value. Why should it be dispensed with in this special problem? or, if not dispensed with, why should it be assumed that the supply available for each competitor is absolutely inelastic? May it not be that the curious consequences spring from this unnatural assumption?

If an individual oligopolist increases his sales, while the others sell the same amount, an appreciable drop in price will be registered in accordance with the demand curve of the market. Other sellers will tend to contract output in accordance with their own cost curves. This will mitigate the drop in price. An individual

demand curve for the products of the oligopolist may be constructed on these lines. The amount that he can sell without causing more than a unit drop in price is equal to the extra amount the market will take at that price plus the amount by which other sellers reduce sales when the price drop occurs, in accordance with their own cost curves. Thus the gradient of the individual demand curve is (arithmetically) less than the gradient of the market curve. In a given market it will be less the smaller is the individual. Moreover, since the marginal revenue curve will diverge from the demand curve more the greater is the output of the individual, his marginal cost will for this reason also be nearer the market price the smaller is the individual. For both these reasons we should expect a gradual transition from the position of the monopolist, whose private demand curve is that of the market, through a series of oligopolists whose private demand curves become flatter the more there are and whose marginal revenue curves diverge less the flatter are the demand curves and the smaller are the oligopolists, to the position of perfect competition when the demand curve is horizontal and its value equal to that of the marginal revenue curve. Professor Chamberlin's " break " disappears.

In his section on price and product differentiation Professor Chamberlin has to deal with tilted private demand curves and their relation to private cost parabolas. He draws two private demand curves (p. 91), one showing the private demand when other producers hold their prices constant and the other showing the demand for the product of any one seller on the assumption that competitors' prices are always identical with his. He traces the relation of these curves as the individual adjusts his output in an illuminating and elegant way. In the section on selling costs, he draws two analogous selling cost curves, and there is an interesting parallelism between the two pieces of analysis. His general conclusions with regard to monopolistic competition compared with pure competition are that prices will be higher, costs higher, the scale of production smaller and the number of producers more. Profits, however, will tend to be the same.

Professor Chamberlin assumes free entry. Hence the tendency of profits to a competitive level. With regard to price policy, if the sellers seek equilibrium in a competitive way, viz. do not take account of the indirect effects of their policy on others, output will rise directly to a point where their profits are competitive. Prices will be high in consequence of the tilted private demand curve.

But if they behave oligopolistically and hold prices higher still, thus securing genuine monopoly profits, new competitors will enter the business, until profits are reduced to the competitive level. Thus the net effect of oligopolistic behaviour is not to raise profits for the individual, but to produce a great excess of capacity, and an enhancement of prices: they will all produce at a much higher point on their private cost parabolas, they will all be producing greatly under capacity at a very high cost, owing to the failure to spread overheads, and the high prices consequent upon this bring them in no monopolistic gains. It is pertinent to inquire why the oligopolistic competitors, whose special attribute is that they trace out to the last stage the effect of their policy on the existing competitors, give no thought to the possibility of attracting new competitors and spoiling their position in that way. Why are they so long-sighted with regard to their existing rivals' reactions, and yet in blinkers with regard to the possibility of new competitors?

But there is a deeper criticism. Surely the assumption of free entry is one which, along with all the other assumptions appropriate to pure competition, requires challenge. Professor Chamberlin has done well to show what the consequences are of assuming free entry on the one hand and price and selling conditions appropriate to monopoly on the other. But the opposite assumption of impediments to entry should also have been given a substantial place. He does make a passing concession to the other point of view. "In so far as profits are higher than the general competitive level in the field as a whole or in any portion of it, new competitors will, *if possible*, invade the field, and reduce them. If this were always possible, as hitherto assumed, the curves would always be tangent and monopoly profits would be eliminated. In fact it is only partially possible. As a result, some (or all) of the curves may lie at various distances to the right of the point of tangency, leaving monopoly profits scattered throughout the group—and throughout the price system." (p. 113.) A fuller treatment than this is desirable.

Professor Chamberlin uses average curves throughout. He is well aware of the relation of these to marginal curves, and discusses it at various crucial points in the argument. A still fuller treatment of the marginal problem, especially where he discusses the relation of the two private demand curves already referred to, would have given his exposition the virtue of completeness.

At one point Professor Chamberlin appears to have slipped

into error. On p. 27 he argues that "price fluctuations render the volume of sales inevitably greater than the equilibrium amount which is indicated by the demand and supply curves." To establish this point he uses an argument which would be appropriate to a simultaneous manifold of prices, but not to a variation of prices through time. He says that when prices are high, some sellers normally excluded will come forward and when prices are low some normally excluded buyers. "Since none of the normally included buyers and sellers can by any circumstances be left out, the total amount exchanged must be greater than that which would equate supply and demand." But this is not so! When prices are high, some normally included sellers *are* left out. Price fluctuations, as he himself argues, are due to imperfect knowledge and foresight. Prices are sometimes high, precisely because certain normally included sellers through lack of foresight have failed to make the goods available, which they would have been perfectly willing to do, had they foreseen what the state of the market would be. Some further comments on the effects of speculation are vitiated by this.

The "dotted curve" mentioned in the text on p. 115 is not present in the figure on p. 114 to which the reference is made.

Professor Chamberlin has also some provocative appendices. This book should play an important part in securing for the theory of monopolistic competition an established place in our corpus of doctrine.

R. F. HARROD

*Theory of Economic Equilibrium. A study of marginal and ultra-marginal phenomena.* By ATTILIO DA EMPOLI. (Chicago: Christiano and Catenacci Publishing Co. 1931. Pp. 184. $3.)

AT the present time the development of the pure theory of value is in a curious state of confusion. On the one hand, considerable advances are being made in giving precision and subtlety to the analysis; on the other hand, the most primitive fallacies are still to be found even in the works of writers who are engaged in contributing to the advance.

Of this confusion Dr. da Empoli's book is a striking example. For instance, the dichotomy inherited from Cournot and Marshall between agricultural industries "subject to diminishing returns" and manufacturing industries "subject to increasing returns" is accepted as an axiom. Now it is possible to argue that in many agricultural industries the optimum size of firm is likely to be

small (because of the lack of uniformity in the technical conditions of production), whereas a large optimum size is common in manufacturing industries (though such *a priori* generalisations about the nature of the real world are neither very well-established nor very useful in analysis). And it is possible to argue that rising supply price may often be found for agricultural commodities (because of the limited supply of certain natural factors of production). But when a writer who appears to be discussing the problem of the optimum size of firms summarises his argument thus: "The most important source of diseconomies is the tendency of natural resources towards increasing costs. These diseconomies can be considered as internal to and special to a firm in those industries under increasing costs (agriculture, mining, etc.) and external to and general in an industry or group of industries under decreasing and constant costs," the reader is plunged into helpless bewilderment.

A second source of confusion is the dichotomy between monopoly and competition. There are two distinct strands of thought in the notion of competition. One is that in a perfect market with a large number of sellers no individual seller can produce any appreciable effect upon the price of the commodity by altering his output. The other is that where there is free entry into an industry no firm in the long run can enjoy a price greater than average cost of production (including rent of superior ability), so that profits must be normal. The word monopoly can be used to describe an absence of either of these conditions. It may mean a state of affairs in which the individual firm has some degree of control over price (either because the market is imperfect or because the number of sellers is small), or it may mean a state of affairs in which the firm can make an abnormal profit in the long period because entry into the trade of fresh competitors is impossible.

It is necessary to keep these two meanings of competition absolutely distinct, and Dr. da Empoli is at great pains to separate them with his "internal competition" and "external competition." But he entirely fails to recognise that the word monopoly has a corresponding double meaning. He quotes Professor Amoroso (p. 55), who proposes to use the word monopoly only to describe the absence of free entry, and after showing for five pages that he has failed to take Professor Amoroso's point, he ends by defining an absence of competition as a situation in which the producer can fix the most profitable price. This definition is in no way a substitute for Professor Amoroso's defini-

tion, and even on its own ground it merely begs the question, since the most profitable price for the individual producer is determined by the elasticity of demand for his output, which, in turn, depends upon the degree of competition which is present.

Finally (and this confusion runs throughout the book and vitiates much of the analysis), Dr. da Empoli's entrepreneurs (although they are expressly stated to be aiming at maximising their profits) appear to attach some mysterious significance to the output at which average cost is a minimum. For instance, when the number of firms is fixed, " the output of each individual producer would be in such relation to the total output of the industry as a whole, that any one of them, in a stiff fight for the existence of their firm against the actual competitors, would in every case produce the maximum output at a minimum cost, realising only his salary as manager of the firm."

But in spite of all this the problems on which Dr. da Empoli is engaged are interesting and important. Many of his criticisms of writers on duopoly are excellent. After pointing out that Cournot makes each duopolist assume that the other's output is independent of his own, while Edgeworth and Bertrand make each assume that the other's price is independent of his own, Dr. da Empoli remarks that the duopolists must soon discover that both assumptions are erroneous " unless they should be suffering from chronic amnesia." Again, the chief problem with which he is concerned is of considerable interest. He shows that the average cost curve of a firm is not in fact the smooth U-shape which we are accustomed to draw, but must, for technical reasons, be composed of a series of small waves, since a small increase in output can often only be made by making an appreciable discontinuous increase in equipment. But the method that he proposes for dealing with this problem is not an improvement on traditional methods. He calls the cost of the output being produced " marginal cost " and the cost of a greater output " ultra-marginal cost." Similarly he calls the demand price of the actual output " marginal utility " and the demand price of a greater output " ultra-marginal utility." With this rather cumbersome machinery he gets some correct results (though the confusion between demand price for the firm and for the industry often leads him astray). But his results can be got more simply by traditional methods. If we know the average costs of successive outputs for a firm, we know marginal cost to the firm (in the orthodox sense), and if we know the supply price of successive outputs for an industry, we know the slope of the supply curve. The " ultra-marginal " idea adds

nothing fresh and the traditional apparatus can easily be adapted to deal with the problems, in which he is chiefly interested, of discontinuities in output and in average cost.

Dr. da Empoli has raised many interesting questions, and anyone who had the patience to disentangle them from his obscure pages and restate them with precision would achieve many important results.

JOAN ROBINSON

*Monetary Theory and the Trade Cycle.* By F. A. HAYEK. (London: Jonathan Cape. Pp. 244. 6*s*.)

THIS is a translation of Professor Hayek's *Geldtheorie und Konjunkturtheorie*, which appeared in 1929. The author sets out to show the necessity of the monetary approach to Trade Cycle theory, but rejects as inadequate those monetary explanations of the cycle which are based merely on the value of money. In his view fluctuations in the price level as a whole do not go to the root of the matter.

"Any future monetary Trade Cycle theory . . . will have to examine not movements in the general price level, but rather those deviations of particular prices from their equilibrium position which were caused by the monetary factor" (p. 116).

"Every disturbance of the equilibrium of prices leads necessarily to shifts in the structure of production. . . . Monetary theory no longer rests content with determining the final reaction of a given monetary change on the purchasing power of money, but attempts instead to trace the successive alterations in particular prices, which eventually bring about a change in the whole price system" (pp. 123–4).

Professor Hayek's more recent work, *Prices and Production*, may be regarded as a more detailed explanation of what these passages mean. In the work now under review he gives us only a very brief treatment, so brief that a reader not already acquainted with his theory might easily miss the point.

"Every given structure of production," he says (p. 212), "requires a certain definite relationship between the prices of the finished products and those of the means of production. In a state of equilibrium the difference necessarily existing between those two sets of prices must correspond to the rate of interest."

"The price margins between means of production and products . . . can only remain constant and in correspondence with the rate of interest so long as the proportion of current income, which at the given rate of interest is not consumed but reinvested

in production, remains exactly equal to the necessary capital required to carry on production. Every change in this proportion must begin by impairing the correspondence of price margins and the interest rate; for it influences both in opposite directions, and so leads to further shifts in the whole structure of production, representing an adjustment to altered price relationships."

Professor Hayek contrasts changes resulting from changes in the saving activity of individuals, which are "self-perpetuating," with those due to additional credits granted to entrepreneurs. The injection of money into circulation by credit creation acts only temporarily. As soon as the additional money becomes income, capital creation reverts to normal, unless *new* credits are granted.

Professor Hayek, following the methods of Böhm-Bawerk, relates the rate of interest to "price margins" between those classes of capital goods which yield results in longer or shorter periods. Under equilibrium conditions the class of capital goods which yield finished products in, say, five years would have a price level lower by one year's interest than the class of capital goods which yield finished products in four years.

But these price margins are a mere fiction. The capital goods yielding finished products in five years do not form a separable self-contained group. They are a heterogeneous collection, containing many members in common with groups yielding finished products in four years or six years or other periods. Practically every commodity would belong to several groups, and the same commodity would of course command the same price wherever it occurred. And where different commodities are found in different groups, what intelligible meaning can be assigned to the price margin? If the price of a shirt goes up and the price of a loom goes down, Professor Hayek would say that the price margin between them has increased. But how are we to calculate what price margin between looms and shirts corresponds to a given rate of interest? The only case where a price margin exists at all is that of a commodity bought and sold by a dealer with no intervening change in its condition, and there the difference between buying and selling prices covers other costs besides interest, and includes profit.

If interest is to be thought of as a margin, it is not between one price and another, but between prices and *costs*. In a state of equilibrium prices throughout the economic system are equal to costs, provided normal profits be included in cost. If by a

price margin we mean the difference between price and the total of *all costs except interest*, then the price margin is equal to interest. If we suppose equilibrium to be disturbed by a fall in the rate of interest, there will be a general fall of costs. In the first instance this will yield additional profit to producers. There will follow an increased demand for capital goods, which may be accompanied by a rise of prices, and an increased output of consumable goods, which may be accompanied by a fall of prices. To regain equilibrium, the price changes must between them just offset the reduction of interest, but that merely means that prices must be adjusted to costs, and all exceptional profits eliminated.

For Professor Hayek's purpose the important case is that of the creation of credit. He assumes too readily that credit granted to entrepreneurs will be applied to "capital creation." In practice the greater part of the credit granted by banks is not for the construction of fixed capital but for working capital and for holding stocks of goods. If a trader holds goods in stock for a longer period, that is a modification of the structure of production, in that the interval between the productive processes and consumption is lengthened. But the actual result of credit creation is to swell demand and hasten sales, so that on balance stocks are little if at all increased, and the interval is shortened rather than lengthened. When Professor Hayek says that "a low rate of interest first raises the prices of capital goods and only subsequently those of consumption goods" (p. 175), it must be remembered that for this purpose capital goods include consumption goods, even in the finished state, at wholesale.

Professor Hayek finds the explanation of the trade cycle in the characteristic of a growing community, that the banks must be constantly putting the rate of interest below the equilibrium level to induce the appropriate increase in the means of payment. But he does not explain why this cause should operate *periodically* rather than continuously, or why, if it does, the period should approximate to ten years rather than ten months or ten days. To explain the actual duration of the trade cycle, he is inclined to bring in the non-monetary causes (pp. 185–7).

Non-monetary theories of the cycle he has disposed of in the earlier part of the book on the grounds, partly that "it is only when the pricing process is itself disturbed that a misdirection of production can occur," and partly that "all non-monetary trade cycle theories tacitly assume that the production of capital goods has been made possible by the creation of new credit" (p. 90).

It would seem that the decisive consideration is that "a process of progressive increase in the supply of money cannot be maintained under our existing credit system, especially since, as it proceeds, more extensive use will be made of cash" (p. 216).

It is not quite clear why this progressive increase cannot continue indefinitely at a rate corresponding to the growth of population and wealth—say, two or three per cent. per annum. If it proceeds at a much *greater* rate, it will no doubt be brought to an end by the banking system. But Professor Hayek offers no explanation why that should occur. R. G. HAWTREY

*The Conflict of Values.* By J. R. BELLERBY. (London: Education Services and Richard Clay & Sons. Pp. x + 204. 6*s*.)

THERE must be some good reasons when a man like Mr. Bellerby, who has made his name as a writer on currency and credit, loses all interest in current economic doctrine and devotes all his thoughts and energies to the problem of the reconstruction of society and its ethical basis. Prominent amongst the reasons doubtless are his reaction to the widespread desire in this country to see the manifest injustices of the competitive system eliminated, and to the growing conviction that a fundamental change of the economic system is needed which will largely eliminate competition and substitute a planned control, or operation, of industries and services. His capacity for independent and original thought assures him that an economic system which is to function efficiently and secure the welfare of all involves action by most individuals from motives quite different from those now prominent in business. He is aware that the economic organisation of any age is largely dependent on the positive morality of the people at that time, and changes with it. An orderly advance of a nation to a wholly different economic system would be facilitated by having a clear objective—an "architect's plan" of the economically desirable state; and in his *Contributive Society*, published in 1931, Mr. Bellerby gave us an outline of an ideal society, with some sketch of how it might be reached.

But more important than his plan, which, so far as it went, was not convincing to those who observe present tendencies, and more important than his particular proposal for establishing it, was his recognition that it depended on the acceptance by individuals of new "values" in life. The attitude of men to their neighbours and to society as a whole must be one of desire, and even anxiety, to *contribute* to the common good.

No conception of the ideal economic state founded on mutual

contribution can be more than a skeleton, however, if there is no clear idea as to ultimate values which are to be sought, and if agreement cannot be assumed as to the method of reaching them. Is the ideal state to be militaristic, with rigid discipline for all, and is valour in war, in life-saving, or in discovery to be the highest good? Or is the state to aim at the encouragement and perfecting of a new religion, through which all other values which have goodness will be achieved? Or, again, are freedom, art, and the material welfare and happiness of all to be the direct objective? The author tried to answer such questions as these at the conclusion of his book *A Contributive Society*. A chapter written to be the last of that book appears as the first of his present work, *The Conflict of Values*, for Mr. Bellerby, dissatisfied with some aspects of the Contributive Society as he had outlined it, boldly decided to put to the test of actual trial the ideas in *A Contributive Society*.

In the second chapter is described an experiment which the author made in conjunction with a number of others who determined to live as far as possible in accordance with the rules outlined in *A Contributive Society*. They formed a group called "The Neighbours," whose aims were founded on the philosophy of values outlined in the first chapter. The two following chapters analyse and criticise the ideas put forward in *A Contributive Society* in the light of the results of the experiment; and they are followed by two chapters of a constructive character on the concepts of the ideal state and the conflict of values, which bring the book to an end.

In its important parts this book is by no means easy reading, and the subject-matter and expressions are so strange to economists that much of it requires reading a second time for the author's object and meaning to become clear. Mr. Bellerby is a highly original and independent thinker, courageous and sincere, and obviously possessed by the contributive urge. Whilst this study belongs to normative economics, it has importance for those interested in pure theory, if only as a demonstration of the futility of attempting to seek the causes of economic actions without first trying to understand the psychology of the actors. The mere fact that the old crude hedonistic basis of economic theory has been discarded does not mean that economists can neglect psychology any more than physiologists can ignore chemistry. Mr. Bellerby, however, is perhaps too independent in his ethics and psychology; and by psychologists, at least, he will be regarded as an amateur.

His logic, moreover, is by no means beyond question. He develops his theory of values from the idea of purpose. "As far as can be judged, the peak towards which evolution has so far converged has been the creation of personality. If we contemplate, for instance, the fact of consciousness—the most profound miracle of existence—and trace the development of consciousness into intellect, of intellect into considered purpose, of purpose into character, the conclusion seems inevitable that the end and focus of the whole process is personality. Evolution throughout time seems to have massed itself for this achievement. And the work persists.

"If this is so, and if, therefore, the development of personality may be ranked as high purpose, it follows that the economic system, to be itself purposive, must contribute to the development. Its processes must be such as to challenge and demand character, and its product must aid men to strong growth.

"It follows, further, that in any scheme of purpose, whether practically or abstractly considered, the central feature of the scheme must be the work of expanding personality" (pp. 10–11).

In the sequel the "ifs" seem to be forgotten. Nevertheless, his observations are profoundly true. Personality cannot be created in a vacuum. "If the spiritual values of character are desired, there must be some physical activity in relation to which the spiritual values may arise" (p. 12). A "web of purpose" is needed. The physical elements in purpose are: Things of Beauty and the search for beauty; Truth, and the pursuit of knowledge. In relation to these there come into being the spiritual values. Personality, beauty, truth, and affection (or love) are the highest values, and the ideal social system must permit the expression of these to the maximum. Industry's contribution to purpose is discussed in an interesting section, which, however, seems to require some revision. The author finds himself compelled, for once, to compare mass production and pure handicraft on the basis of total *satisfaction*!

The last two chapters, on the concepts of the ideal state and the conflict of values, are the most finished and useful. We have here graphically presented six concepts of the ideal state of existence in heaven or on earth: the Vikings' Valhalla, where Odin, God of War, received the souls of those slain in battle; Nirvana, of the Buddhists; Plato's *Republic*; More's *Utopia*; Francis Bacon's *New Atlantis* and William Morris's *News from Nowhere*. And these represent to their believers or authors six different schemes of values, each with a different value pre-

dominant. The Vikings enjoyed adventure and battle, and their heaven corresponded. Nirvana is a state of peace, personal tranquillity and security attained through wisdom. Social harmony was Plato's ideal, based, not on abolition of class distinctions, but on education and a perfectly adapted system of laws. Utopia elevates filial obedience, family and social discipline, and religion, and other virtues making for the cohesive semi-monarchical state. For Bacon nothing really mattered except science—knowledge for its own sake and for the benefit of man. Morris, architect, craftsman, man of affairs, and writer of poetry and historical romances, believed in happiness attained through self-expression in activities, especially in construction and skilled handwork. He was convinced that universal freedom of expression would bring out the goodness in men, and ultimately abolish the need for property rights, money, law and government.

These schemes of values are mutually conflicting; but they are only six out of a much larger number of schemes of values which are ardently believed in at the present day. How then is the ideal state to be planned if there is no agreement as to fundamental values? This is the main theme of the last two chapters, though its development is somewhat impeded by lengthy examples and digressions. The ideal state, says the author, calls for the construction of an ideal economic system, an ideal political system, and the discovery of ideal personal activity. It is the search for the last, and for real values, and how men can be given freedom for self-expression without conflict, that engage the author's mind; and he comes to the wise conclusion that if a person attempts an intellectual judgment as to what conduct of his, or kind of work, would lead to his maximum self-expression, he is more likely to be wrong than right. The decision must be that of the heart rather than the head.

Moral satisfaction comes only through the right choice of values; but to avoid conflict there must be, even in the ideal state, some widely accepted scale of values. Values being different in kind, however, there can be no common unit of measurement; and there is only one thing to which a value can be relative: a Plan. It is the function of religion to supply such a plan; but, in the solution of conflicts of values, "religion *must* succeed if religion is to have any meaning at all" (p. 195).

Mr. Bellerby has shown his power of grasping the fundamentals of life and seeing them in relation to the problems of Western civilisation. He has given us a book full of idealism, which lifts the economist and politician (if he will read it) right

out of the futilities of present controversies about currency reform, tariffs, and the number of guns to be allowed to each nation. The inference seems to be, though Mr. Bellerby does not specifically say so, that when a new and definite scheme of values has become widely accepted in the advanced industrial countries, the economic structure of society will be rapidly changed to accord with it. Whether the author's style and views commend themselves or not at first reading, the book cannot but be highly stimulating to all who dare to think out the fundamentals of life.

H. S. JEVONS

*Economic Equality in the Co-operative Commonwealth.* By H. STANLEY JEVONS. (London: Methuen & Co., Ltd. 1933. Pp. xx + 355. 10*s.* 6*d.*)

To the making of Utopias there is no end, since almost any thoughtful person could devise a better world than the one we live in. There is no finality in human nature as we know it, and nothing forbids the assumption of possible development in any direction that appeals to us.

Mr. Jevons postulates a general growing desire for a new and orderly economic system which shall realise social justice. Socialism, however, is rejected by him as inevitably self-destructive, since any recognised form would still perpetuate differences of remuneration for different services with their attendant jealousies and friction. Nothing but complete equality of reward, which can best be attained by the abolition of money, can (in his opinion) ensure a stable order.

After a description of the very familiar defects of the Capitalist System Mr. Jevons concludes that when all its waste and evils are things of the past, when the community need no longer support either the idle rich or the delinquent poor, when payment for risk-bearing and the existing high costs of distribution have been eliminated, when production and improved processes will (as he assumes they must) have forged and leaped ahead almost beyond our power of prevision, there will be sufficient material wealth to ensure for everyone a standard of living equivalent to that represented to-day by an income of £12 a week, which, in the absence of anxiety about health and solicitude for the education of children, will be adequate for physical and mental health in every occupation. There will be an end of all deceit, double-dealing, selfishness and cupidity; there will be general good-will, brotherly

love and a universal whole-hearted desire to serve the community; there will be joy in achievement and a great revival of artistic creation. Here the reader may be forgiven for adopting a sceptical attitude. Can so much be expected from the change, if indeed the change can be realised? Becky Sharp was quite sure that she and Rawdon could be so good if they had but the money. Many others both in fact and fiction have suffered from the same conviction. Mr. Jevons is convinced that the opposite holds good. He is not, however, always consistent, for he believes that jealousy would be fatal to Socialism. Will Communism leave no such loop-hole or will it succeed in eradicating jealousy and incidentally all other unworthy motives? Is the passion for equality a desire to give of our abundance or merely a dislike of seeing others served better than ourselves? Mr. Jevons's replies to these and other pertinent questions are no more satisfactory replies than those of other theorists. He confines himself to pointing out that we have already learnt to subordinate individual to class interests, and that to subordinate them to the interests of the whole community will be but a short step farther. The more fortunate classes will eventually give up their privileges without a struggle, whether from necessity or from conviction. But he insists on the need for intellectual preparedness and gradual transformation, and even recommends the postponement of the transition until such material progress has been achieved that the sacrifices imposed upon the upper and middle classes will not be too great. Whether this is a measure of social justice or a concession to expediency is not quite clear.

This volume is evidently the writer's *magnum opus*, the fruit of many years' work and careful thinking. Like many deferred publications, it suffers from such postponement. It is, however, undoubtedly interesting; it is couched in temperate language, and even if some of the remedies proposed seem fantastic many of the criticisms of the existing order will command ready assent.

An appendix entitled "Mill on Communism" consists of an extract from the famous Book II, Chapter I of the *Principles*, which makes in a few pages as good a case for Communism as has perhaps ever been made by any writer however voluminous. But the extract, surprisingly enough, stops short of the arguments adduced by Mill on the other side.

H. REYNARD

*Prices.* By GEORGE F. WARREN, Ph.D., Professor of Agricultural Economics and Farm Management at Cornell University, and FRANK A. PEARSON, Ph.D., Professor of Prices and Statistics at Cornell University. (New York: John Wiley & Sons, Inc., and London: Chapman and Hall, Ltd. 1933. Pp. vii + 386. 25*s*.)

THE authors of this discussion of the laws of prices state in the preface that their aim is "to add something to the science of economics, something to the dissemination of knowledge, and to help individuals with their immediate problems, so that they may adjust their affairs to the probable economic weather." For these purposes they have collected together a vast amount of information on index-numbers, production, money, gold and prices, panics, silver, inflation and deflation, wages, debts, taxes, real estate, stocks, and various sections of the history of prices. To deal with the book fully would require a treatise of nearly the same length and a reviewer must be content to deal only with a few significant fragments. This laborious and conscientious work cannot help but attract much criticism and at the same time much approval; it will be welcomed by some as yielding support to theories of the monetary determination of prices and business, while to others parts at least will appear fantastic.

The discussion opens with a comparison of the prices of individual commodities with the general price-level; the former fluctuate about the latter, and where prices decline, as in farm products, the cause is not over-production but "a rise in the value of money," or, to take another example, "the serious thing was the decline in the general level of commodity prices which dragged the hog cycle down." Production is then examined and an index for crops, forest products, and minerals shows for the United States an annual rise of 1·73 per cent. per head before the War (apparently from 1839 to 1914) and an annual rise of only 0·64 per cent. from 1915 to 1929. "There is no basis for the belief that high production is the cause of the depression." "For an explanation of the price changes, we must look outside the commodities themselves. The logical place is to look at the other side of the price equation." The following quotations illustrate the authors' views on recent price history, when prices were high from 1915 to 1920 and again (after a great fall) from 1921 to 1929, followed by a collapse. "Attempts to explain high prices in terms of war demand for food do not explain why commodities were worth only a little more than pre-war in terms

of silver or in terms of practically anything else except gold. . . . It was gold rather than commodities that changed in value. The value of gold was determined primarily by world supply and world demand." "From 1921 to 1929, prices were at all times high for the world gold supply, but were low for the United States gold supply. It seems probable that the growing interest of the world in accumulating gold so as to go back to the gold standard was steadily influencing the value of gold." "Many economists have been misled by attempting to explain the price-level on the basis of gold supply alone without considering the price-level to which business was adjusted. The low value of gold and resulting high prices from 1916 to 1928 were due to low demand for gold for monetary uses. The gold panic of 1929 and the collapse in the price structure were due to a sudden world-wide return of the demand for gold. On the pre-war relationships of gold to production of commodities there was about enough gold to sustain pre-war prices. The demand was greater than if there had been no war because every country desired high reserves to establish confidence. . . . Since there was only gold enough for about pre-war prices with normal demand, prices below pre-war were and are to be expected. But all the gold-using countries that had not reduced the weight of gold in their coins had become adjusted to a commodity price-level of about 40 to 50 per cent. above pre-war."

It is hoped that the foregoing gives a fair summary of the central part of the authors' doctrine. The rest of the book is occupied with the discussion of particular problems and with the reinforcement of the argument from various points of view.

Something may usefully be said with regard to some of the index-numbers used in the debate. Professors Warren and Pearson in their first chapter give an index-number which, they claim, "represents very accurately the general trend of wholesale prices in the United States from 1720 to 1932." The authenticity of an index-number of prices depends, firstly, on the representative character of the quotations chosen and, secondly, on their "weighting" according to the relative importance in the economic structure of the industries to which they belong. That relative importance changes not only according to place but in time, and it follows that the price indices of different countries can only be compared with limited accuracy, and that any index-number falls out of gear after the passage of a limited number of years. Consequently, the continuance backwards for a century or two of an index based on a modern period, 1910–14

in this case, may well be the cause of misleading deductions. In another table the base period is 1880–1914, during which the relative position of different industries was changing so rapidly and greatly as to give little meaning to an average.

A table of considerable importance is shown on p. 48. It gives index-numbers of the physical volume of world production from 1840 to 1931, based upon a series for 1865–1931 prepared for the Federal Reserve Bank of New York by Carl Snyder; the earlier indices are obtained by the backward projection of the Snyder curve, checked by an index-number calculated on shipping, railroad mileage, cotton, coal, and pig iron. Snyder is a statistician of eminence, but still, with all respect, one must demur to such calculations being taken as a source for economic deductions. They are curious, and probably represent the trend of development, but very doubtfully its magnitude. When associated by our authors with equally uncertain figures of world population to give output per head, they produce only the shakiest foundation for monetary theory. Another table (pp. 78–9) of gold stocks is open to a similar criticism as regards the uncertainty of the earlier data on which all the others depend; even recent figures, involving calculations of the use of gold in industry and of the absorption of gold in hoards, are in some degree imprecise. It follows, therefore, that the ratio of gold to world production, of one unsure estimate to another unsure estimate, when used for comparison with an index-number of gold prices (which itself is questionable, since it is open to the criticisms made above, of long duration and of wide basis—1880–1914) can only yield arithmetical results alike doubtful when the two series agree and when they disagree.

It would appear to be an error to compare, as on p. 71, prices and production in the United States of commodities like wheat and maize, the prices of which are regulated in a world market and should be compared with world production. For example, it is stated that between June 1929 and June 1931 the Chicago price of maize fell by nearly 38 per cent. though the crop was 26 per cent. smaller; the world crop of 1930–31, which would influence prices in 1931, was, however, less than 5 per cent. below that of 1928–9. Again, the Chicago price of wheat fell by 38·5 per cent. in 1929–31, but world production declined by only 5 per cent.; world stocks, however, rose by 26 per cent., thus affording a sufficient explanation of the fall in price. In the same connection it may be observed that to compare with price movements the changes in output per head of the population of the

producing country is meaningless in the case of export commodities.

HENRY W. MACROSTY

*Booms and Depressions: Some First Principles.* By IRVING FISHER. (London: Allen and Unwin. 1933. Pp. xxi + 258. 8*s*. 6*d*.)

*Money: Gold, Silver and Paper.* By FRANCIS W. HIRST. (London: Scribners. 1933. Pp. xiii + 272. 7*s*. 6*d*.)

THE first half of *Booms and Depressions* contains a fairly satisfactory description of the trade cycle, together with a rather less satisfactory account of the theories which have sought to explain it. The second half contains a rapid survey of recent economic history, together with a brief account of Professor Fisher's well-known proposals for price-stabilisation. The book is well illustrated with statistics and graphs, mostly dealing with the United States, and these are much its most interesting feature. From the pen of Professor Fisher this book cannot but be something of a disappointment. What little theory it contains is in no way novel, while Professor Fisher's contentment with price stability as a policy, and emphasis on over-indebtedness rather than over-investment as the root of all evil, are not encouraging.

Mr. Hirst's book is a very different kettle of fish. Theory, and especially controversial theory, is intentionally reduced to a minimum. Mr. Hirst's position is, of course, rigidly conservative, and his last chapter, on "Monetary Reform," sounds somewhat quaint to modern ears. A violent opponent of monetary management in all its forms, not even satisfied with a gold bullion standard, Mr. Hirst would like to return to a system in which gold actually circulates. But his main object has been to write a popular account of the history of coinage from the earliest times, and in all countries; and in this he succeeds uncommonly well. The book is liberally illustrated with quotations from authorities both ancient and modern, perhaps the most amusing being Marco Polo's account of Kubla Khan's paper money. An excellent index assists reference. A minor misprint occurs on p. 53: "overvalued" should read "undervalued."

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*London.*

*The Socialisation of Banking.* By OSCAR SACHSE. Foreword by the HON. SIR STAFFORD CRIPPS. (Macmillan. 1933. Pp. 135. 2*s.* 6*d.*)

MR. SACHSE tells us that he is not a professional economist but an architect: which perhaps explains the air of naïve surprise with which he records such discoveries as that money is merely a paper promise to pay, and has no necessary connection with the precious metals. From this little book we learn that the author believes that the issue of money should be controlled by reference to the general level of prices; that there is probably quite enough money in existence to do all the work required of it, provided only that the velocity of circulation can be speeded up, to which end it is proposed that bank-notes should be valid for a limited period only, and subject to a small fee on renewal; that in future new credit, if required, should be issued direct to consumers; and that the payment of interest in any form is unjustifiable. Apart from an expression of the author's view that this system should be worked through a national Bank of Great Britain, and of his admiration for the continental postal cheque system, the book contains nothing about the socialisation of banking. BARBARA WOOTTON

*Democracy, Debts and Disarmament.* By WALTON NEWBOLD. (Methuen. 1933. Pp. 344. 8*s.* 6*d.*)

MR. NEWBOLD'S book is the despair of the reviewer. The author sets out to tell the tale of the machinations of financial and industrial groups, and their influence on the course of political and economic history from the sixteenth century to the summer of the year 1933; dealing, however, in detail only with the nineteenth and twentieth centuries. In compiling his material Mr. Newbold has both consulted the Press of many countries and himself travelled all over the world, gathering first-hand information from bankers, industrialists, politicians and labour leaders. In the result he has collected an enormous amount of very valuable material, and for this alone his book would deserve the close attention of any serious student of economic development.

But the despair of the reviewer, it is to be feared, will be the despair of many a reader also. For the book leaves absolutely no clear impression of what the author is trying to put across. It is clear that he aims at doing a great deal more than compile a motley chronicle of events in which (pp. 68–69) the sinking of

the *Lusitania* is mixed up with Japanese policy in Manchuria, or with the presence of the German ambassador to the United States and one Oscar Strauss, sometime American representative at Constantinople, at a dinner given by James Speyer of the Deutsche Bank, on the eve of the expected entry of the German armies into Paris. It is clear also that his study is intended to reveal the steady march of the capitalist system of industry towards what the author believes is its final dissolution. Beyond this, I have myself made out (I hope correctly) that Mr. Newbold seeks to demonstrate that it is the masters of technique who hold the keys of power, and that, with changing technique, it has thus been first coal and iron, then oil, then electricity and therewith certain non-ferrous metals, the possession of which has been all-important to those who would guide our destinies.

But the rest, I must confess, after many efforts, remains darkness: the more to be regretted because it is clear enough that Mr. Newbold has something to say, and that the twenty-five years of research which have gone to the making of this book have produced results which ought to be made widely available. Probably the root of the trouble is the author's style, at once elusive and allusive, which leaves the reader to supply too many links in the chain of argument. To take only two or three random examples, what is the meaning of the hint (pp. 79 and 80) that great and important significance is to be attached to the fact that the dates when British War loans may be converted "have fallen within the term of office of a most powerfully entrenched Conservative Administration"? Exactly how (p. 157) was the Kellogg Pact the result of the release of 600,000,000 dollars of gold from the United States? And what is the reader to understand by such a sentence as this, thrust into the midst of a discussion on the economic position of Vienna under the post-war regime:—"The elements which would have made the Soviet Union a paradise for a year at the price of eventual insolvency and foreclosure upon it of a more or less indulgent finance capital with its first-line of welfare-workers and its replacement units of ruthless chartered accountants were always dominant in the circles of that queer cult of the *petit-bourgeoisie* Austro-Marxism"? The context (which contains no other reference to the Soviet Union at least for several pages) gives no help. Mr. Newbold claims to be writing a "popular study." Could he not, therefore, please interpret for the benefit of those who quite honestly cannot understand this language?

BARBARA WOOTTON

*This Money Business.* By BARNARD ELLINGER, C.B.E. (P. S. King. Pp. 141. 6*s*.)

THIS is an introduction to the institutions and working of the London money market. It is written in simple language, and the description is made concrete by a frequent use of specific facts and figures, partly drawn from the evidence heard by the Macmillan Committee, in place of the generalisations often found in books of this kind. We might have been given a section on the Stock Exchange, an illustrative table showing the various items of expense involved in sending gold from one centre to another, and more comments on institutions such as insurance companies and building societies, which compete with banks in lending and borrowing, but on the whole the descriptive part is well done.

Perhaps Mr. Ellinger does not show sufficiently how the different rates of interest are linked together, like the prices of different qualities of wheat, and how they all tend to vary with the supply of or demand for free capital. Thus he gives the impression of a monopolistic rather than a competitive market when he says " it is obvious " that normally a change in the Bank Rate will be followed by changes in the other rates. Instead of saying clearly that when the new conditions of supply and demand do not correspond to the new Bank Rate, the Bank must change them in order to make its Rate effective, he treats open-market operations as a second weapon, needed only on rare occasions.

We are told at the outset that " this book does not deal with the theory of money." Nevertheless, the concept of a general price-level is explained, with no hint of the difficulties involved in it, and the reader is told with emphasis that the goal of monetary policy should be the stability of prices. It is surely unfair to the student not to discuss the disadvantages of this goal as well as its advantages, before making such a positive statement. Yet, despite two chapters on the gold standard, the possible conflict between stable internal prices and stable exchange rates is not brought out. Nor is anything said of the disequilibrium between savings and investment which this policy might cause. Given technical progress, it would lead to an inflationary boom; the retort that this would not happen if factor prices were perfectly flexible (a retort which usually comes from those who treat them, in other connections, as rigid) is without weight in a world of fixed interest charges and other long-term contracts. Given

technical decline (always a possible result of human folly) it would lead to depression and unemployment. It may be that on balance the advantages of the policy outweigh its disadvantages, but each can decide that for himself. It is a pity that the author has marred a useful book by stating one of several views as if it were a proved and accepted truth.

FREDERIC BENHAM

*The Theory of Profits.* By PRAFULLA CHANDRA GHOSH. (University of Calcutta Press. 1933. Pp. xx + 442.)

THE theory of profit is a question of equal interest to the economist and to the reformer, but strictly speaking the latter begins where the former leaves off, the economist's conclusions supplying the premises on which the reformer bases his arguments. In practice the rôles are apt to be confused; the economist is liable to dogmatise, and the social reformer to build on his own generalisations of doubtful economic validity.

No such accusation can be brought against Mr. Ghosh, who is only concerned to find a rational solution for our present difficulties. He explains tendencies, assigns effects to causes and ends on a note of advice, but he neither condemns the existing system nor suggests any possible alternative. His first task is to analyse the meaning of profit, and he proceeds to review the doctrines of every economist, British and American, classical and modern, distinguished or obscure. His exposition is lucid and his analysis acute, but the method he adopts makes for a discussion of inordinate length. Thus one chapter gives an historical and comparative account of the concept of profit as entrepreneur's remuneration, another deals with risk-bearing, another with various views of "pure" profit, yet another with the marginal productivity theory, and under each head every author's views are separately explained and substantiated, or criticised and rejected. The result is constant overlapping and frequent repetition. A great deal of this exposition might have been taken for granted, and the writer might well have proceeded at an earlier stage to his own analysis, which is interesting and penetrating, and in places original.

At one point in the discussion of pure profit, Mr. Ghosh seems almost to hint that somewhere among the entrepreneur's activities there is an element of creation which might afford him a special title to remuneration. But the point is lost in further comparative exposition, and his own conclusion, reached much later in the volume, is that entrepreneur's profit is explained

only "by the virtually mercantile nature of his social function as a whole"; it is "secured as the combined effect of his skill both in production, purchase and sale." The source of our present trouble lies in the capitalist's refusal to consume, his greed for accumulation heedless of society's need or his own. The defect, though institutional, is curable. He holds that it cannot be cured by "selling to Labour at a lower price," since this would mean too much loss to the capitalist. This point might well have been argued further, but the book ends a little disappointingly with a mere exhortation to the capitalist to modify his habit of consumption and accumulation if he would avoid stifling the life of the community and paving the way to his own destruction.

H. REYNARD

*The Wreck of Reparations.* By JOHN W. WHEELER-BENNETT. (London: George Allen and Unwin. 1933, Pp. 295. 12*s.* 6*d.*)

MR. WHEELER-BENNETT has increased public indebtedness to him by the publication of this further volume in his valuable series of studies of post-bellum international problems in a province which he has made peculiarly his own. In earlier works he had brought the history of Reparations down to the arrangement concluded in 1930, which many credulous people professed to regard as a final settlement. The great value of the present volume consists in the fact that it puts on permanent record the entire story of the Reparation Comedy of Errors staged at various Continental capitals during the past ten years, with Messrs. Dawes and Young as impresarios, the cream (presumably) of European statesmen as actors, and France as a jealous custodian of the box-office. Never having shared the miscalculation that, given only ample time, Germany would be able to pay Reparations in indefinite amount, Mr. Wheeler-Bennett is altogether justified in adopting the rôle of the candid critic of the past trifling and tinkering with this problem. Incidentally, he does well also to recall the many obstacles against which all endeavours to scale down the Reparations bill have had to contend. Even after Germany's financial collapse in the summer of 1931 under the crushing burdens imposed upon her, and only President Hoover's moratorium had saved the situation, the French Government seriously issued a formal declaration to the effect that there could be no question of either tearing up (*déchirer*) or even modifying the sacred Young Plan, since it

was "*une convention définitive.*" The plea put forward in France at that time was that the Young Plan was "the sole remaining guarantee for the ultimate reimbursement of France for money actually spent in restoring war damage." Yet, as Mr. Lloyd George lately told us, by that time Germany had paid Reparations in money and kind to the amount of at least 1905 million pounds, of which France had received the larger part, and although her Government had originally claimed 5360 million pounds as war damages, the amount actually expended on that score cannot have exceeded 650 millions. As is well known, the moratorium afforded only a momentary alleviation of Germany's financial straits. Drastic financial reforms and economies were enforced in many directions, but they, too, failed to give the needed relief. The truth was, as Mr. Wheeler-Bennett points out, that for several years Germany had been kept alive economically, and even enabled to pay Reparations, mainly by British loans and profits on trade with this country, with the result that "France had drawn a large part of her receipts on account of reparations indirectly from Great Britain."

Before the Lausanne Conference met, the German Government said plainly that its delegation would press for the total cessation of Reparation payments. While Great Britain and Italy received the intimation with equanimity, France promptly replied with rebuke and more talk of the sanctity of treaties and conventions, but the world smiled at the protest as *démodé* and archaic. Eventually France had, as usual, to fall into line, though her representatives at Lausanne insisted on the insertion in the resulting agreement of a provision which nominally still kept Reparations in a state of suspended animation. For although the Convention itself expressly states that Reparations have ceased, its authors concluded simultaneously a clandestine pact, humorously called a "gentlemen's agreement," under which the validity and operation of the Convention are made dependent on an arrangement being arrived at with America regarding the debts of European States to her. Of the existence of this secret document the German Government was not told until it had accepted the terms contained in the Convention. Mr. Wheeler-Bennett refuses to believe that the word Reparation will again figure in any communication between the creditor Powers and Germany, or that Germany will pay the commutation sum of 150 million pounds sterling (France pressed for 300 millions) in the form of 5 per cent. bonds, which is stipulated in the Lausanne Convention. In the interest of the world's

peace and prosperity it is to be hoped that this reasonable assumption will prove correct. It is well to have the whole Reparation story put together so concisely, lucidly, and impressively as it is in these pages. If a mild criticism may be added, it is that Mr. Wheeler-Bennett's authority and reputation are now too solid and too generally recognised to need the assistance of dedications and contributed introductions.

W. H. DAWSON

*Statistics in Theory and Practice.* By L. R. CONNOR. (London: Sir Isaac Pitman & Sons, Ltd. 1932. Pp. xvi + 371. 12*s.* 6*d.* net.)

THERE are a number of text-books of proved value in the theory and practice of statistics, some particularly useful to the student of economics, but there is probably no book which covers so much ground as this one. Within its compass of 365 pages of matter, one for each day in the year, it deals in some considerable detail with the necessary work underlying the organisation of a statistical inquiry, with statistical data, involving measurement, classification and tabulation, by hand and by machine, and with the preparation of a great variety of diagrams and graphs. We then find the theory taken up in so far as it concerns the notion of a frequency distribution, the calculation of statistical averages, measures of dispersion and skewness, and correlation, bringing in at the same time the theory of sampling and the calculation of probable errors. Elementary problems on probability find a place, and there is a most valuable chapter on index-numbers. Problems of interpolation, graduation and curve-fitting are dealt with, being preceded by an introduction to the theory of finite differences. This concludes Part I of the book. The second part, entitled Applied Statistics, finds the author giving illustrations of a very large number of practical problems in official statistics, and dealing with population, prices and wages, employment, profit, trade, finance, production, wealth and business statistics. This section should prove of great value to the reader in giving him plenty of practice in the handling of statistics, and introducing him to current statistical publications and to technical statistical work of an advanced character. The illustrations are very full, and include elaborate and detailed tables and charts, taken from various official publications.

No professional statistician can afford to be without the book, which is clearly written, with short paragraphs, in which the salient points are emphasised by being printed in clarendon type, and a

useful summary is provided at the close of each chapter. The author has an undoubted gift of exposition, and the way he has been able to make clear and precise statements within the compass of very few words has enabled him to cover an amount of ground that could be attempted by few people. Naturally he has limited himself, and choosing, very rightly for a book of this character, to deal in greatest detail with the practice of the subject, has had perforce to treat only the elementary parts of the theory. Simple algebraic proofs have been given where possible to hearten the reader, but otherwise the author has been content to state results. The class of reader to whom this book is addressed is not as a rule mathematically equipped to appreciate the whole background of theory, and with few exceptions can be advised to trust the authority of this book. Such exceptions as there are relate to comparatively modern developments of theory, which are gradually, however, finding their way into the text-book, and into current practice. For example, we know that exact theory appropriate for small samples was stimulated by the rather meagre data often possessed by the biologist. Nevertheless, it is not only in this sphere that the sample is small, and there must often be cases in economic statistics of limited data, so that one ought strictly to supplement the statement of probable errors of statistical quantities given on p. 134 by an indication of the limits to the usefulness of the criterion based on the probable error. In particular, the correlation and regression coefficients should be dealt with in greater detail, and a distinction drawn, by the use of a different notation, between the population parameters and the estimates of these derived from a sample of data.

One might be inclined to quarrel with the statement on p. 80, that the arithmetic average is not affected by the addition of or multiplication by a constant quantity, were it not that what the author obviously means is that the constant enters into the average in the same way that it does in the case of the original measures. It is doubtful whether the statement (p. 113) that the theory of skewness is of more importance in biological and other investigations depending upon laboratory experiments than in the fields of economic and social statistics, is true, especially when combined with the further statement (p. 118) that the actual normal distributions of physical objects are rare, except in certain branches of biological science. An important problem that has still to be solved by the economic statistician relates to the fact that series of annual or other data, which form a large part of his material, are not independent, in the sense that

the numerical results of physical or biological experimentation often are, but are successively correlated, and this correlation ought to be taken into account, yet it seldom is.

The section on curve-fitting will prove heavy reading for the student not accustomed to large-scale computations, yet it is important that he should learn how the operations are carried out. A simpler treatment would have resulted from using orthogonal polynomials, and describing a standard procedure such as that recently published by Aitken. As it is, no mention is made of the important problem of testing the significance of the fit, a matter that is perhaps of some theoretical difficulty, but which can nevertheless be carried out quite quickly as a matter of arithmetical routine. The practice of curve-fitting is so widely adopted in economic statistics that fuller information on this point would have been welcome.

J. WISHART

*The Industrial Revolution in North Wales.* By A. H. DODD. (Cardiff: University of Wales Press Board. 1933. Pp. xxxi + 439).

PROFESSOR DODD, who is well aware of the ambiguities and misleading associations of the phrase "the industrial revolution," adopts this title as the best short way of describing an account of the economic and social history of North Wales from about the accession of George III to about the middle of the nineteenth century. He has made a thorough and well-proportioned survey of the many printed authorities and a number of manuscripts, and the other subjects are not less adequately treated than those on which he has already published special studies. The book is interestingly written and provided with excellent maps. It will save space to say that Professor Dodd's general conception of his task resembles that of Professor Clapham: he divides his book by subjects and gives a clear, positive description of the development in each. Thus he gives not only a valuable regional history, but also a corrective to those well-known works on his period in which, by too much attention to Lancashire and Yorkshire, a false impression is created of "a rapid victory for steam-power and big industry, accompanied by a hasty concentration of manufactures on the coalfields, and involving the summary demise of scattered trades and handicrafts."

Many readers will be surprised to find how much there is to say about the industrial history of these six remote and thinly populated counties, which, at the beginning of the period, had only

twenty-three market towns between them. The general effect of the modern improvements of transport was unfavourable to industry in North Wales, for although they gave access to new markets, they gave it also to powerful competitors and enabled them to flood with their cheaper products even the once inaccessible markets of North Wales itself. Thus the history of the slate-quarrying industry, which continued to expand until 1881, though increasingly concentrated in Snowdonia, is a lonely exception due to natural advantages. The other purely Welsh industry, the woollen manufacture of Montgomeryshire flannels and Denbigh and Merioneth webs, enjoyed a rising prosperity in the early factory age, the forty years before Queen Victoria's accession, but it too declined in the age of steam-power. Other textile enterprises, such as the cotton manufacture at Holywell, Mold and Llangollen, were extensions of English industries, favoured by the cheapness of labour in Wales, but dependent on other advantages, such as that of water-power, which proved to be temporary. The distinctive language and nationality of Wales throw up sharply the importance of the new capitalists from a distance like the Wilkinsons who were the leaders of the iron industry at Bersham and Brymbo. Thomas Williams, the copper millionaire of Anglesey, was an exception, but the exploitation of copper, as of lead, zinc and chemicals, was largely due to impulses from across the border. Professor Dodd has many useful remarks on the connection of immigrant capital with immigrant labour, the similarity of colliery organisation in Wales and the English Midlands, the stimulus given to coal-mining in Flint and Denbigh by the needs of the local industries, and other instances of the interdependence of economic changes.

There is still room for new work on some aspects of the period. Professor Dodd points out that we do not know how far the three-field system extended into Wales, and that the manuscript collections at Bangor may make possible a re-writing of the history of the enclosures. Something may be done to discover how many of the " spirited proprietors " of the eighteenth century financed their agricultural improvements with profits made in the towns. The business organisation of coastwise shipping is a small subject, but needing investigation. It would, however, be entirely unfair to suggest that the present book is inadequate to its purpose. Further research on the previous period will perhaps alter the perspective in some parts. The boom in lead and copper after 1688, for instance, was due not to the political blessings of the Glorious Revolution (pp. 20, 22), but to the war against

France. We are scarcely in a position to estimate how far the bad health of the poor in George III's reign was due to new evils (pp. 355–6). Once or twice Professor Dodd passes judgments where the criteria used may perhaps be changed if they are more fully examined. It is, for instance, agreed that the expenses of enclosures were too high; but we lack a standard of what would have been a reasonable level of expense. The fluctuations of poor-rates should be brought into relation with changes of prices: they reflect these as well as changes in the number of recipients of relief. But these are adjustments which readers can make for themselves. Professor Dodd's book will serve them well as a standard authority on its subject.

G. N. CLARK

*An Industrial Survey of Cumberland and Furness.* By JOHN JEWKES and ALLAN WINTERBOTTOM. (Manchester University Press. 1933. Pp. xiv + 175. 6*s.* net or 8*s.* 6*d.* in cloth.)

THE authors of this Survey belong to the Research Section of the Department of Economics and Commerce of Manchester University, and in conducting their inquiries they have had much help from Government Departments, Local Authorities, and, particularly, Employment Exchange Officers. The area is characterised by a lack of industrial diversification. The output of coal was increasing, but that of pig iron was decreasing before the War, and many districts where hematite ore had been raised were exhausted. Shipbuilding and engineering were, however, advancing rapidly, and the population of Furness increased by 14 per cent. between 1881 and 1911. "Before the War this Region was a large exporter of iron, steel and coal, and a substantial proportion of the warships constructed were for foreign countries. Indeed, Cumberland must naturally look to foreign rather than home markets, for its geographical isolation renders competition difficult where long railway haulage has to be undertaken. But export trade has been seriously, and undoubtedly permanently, reduced, for reasons which have brought depression to the heavy export industries of Great Britain as a whole." Basic steel has successfully competed with the acid steel made from hematite, improvements in coal and ironstone mining have reduced the demand for labour, and "the post-war reorganisation of the iron and steel and shipbuilding industries appears to have created further elements of instability and uncertainty on the West Coast." Through mergers only three large iron and steel

concerns remain, and of these the United Steel Cos., Ltd., has also modern iron and steel plants in Yorkshire and Lincolnshire. The Vickers-Armstrong concern has shipbuilding yards in other centres besides Barrow.

"It seems impossible," say the authors, "to escape the conclusions that the future of these industries is far from promising, and that the course of events suggests a continuance of the general industrial decline which has dated from about 1880 in Cumberland and from the end of the War in the Furness district." The next chapter deals with the local distribution of unemployment, showing that there are "almost derelict areas in which large bodies of labour continue to exist without the hope of future employment," such as Cleator Moor and Maryport. The effects on local finance have been calamitous, and the rate levied in Cumberland to meet the net expenses of the Public Assistance Committees in 1931–2 was 4*s.* 1*d.*, compared with 2*s.* 8*d.* for all counties in England and Wales, excluding London. Four suggestions for the expansion of employment outside the staple industries of the area are then considered—the hydrogenation of coal, the use of coke-oven gas for town's purposes, the development of Cumberland as a holiday centre, and the development of agriculture. The commercial possibilities of hydrogenation are still doubtful, and, as the great bulk of Cumberland coal is used for industrial purposes or is exported, the production of an additional 800,000 tons annually to supply an economic hydrogenation unit would probably cause recourse to poorer and more expensive mines. The use of coke-oven gas is impracticable, and the tourist industry would yield little employment. Mr. Dinsdale, of the Farm Economics Branch of Armstrong College, in a later chapter on "Agriculture," doubts the possibility that "Cumberland agriculture will be in any better position than other areas to absorb any appreciable part of the unemployed labour in the county," though he agrees that recent State policy, if continued, will "bring greater stability to agricultural markets."

There is more hope in industrial transference. The population of the Survey Region fell by about 9 per cent. between 1921 and 1931; in the industrial Barrow-in-Furness and Cleator Moor districts the fall was about 15 per cent. Emigration overseas, on the other hand, has declined. The Ministry of Labour transfer schemes for men have failed, but those for boys have been encouraging in their results. Training is important, and there are some useful notes under this head. Finally, with a view to a long-range social policy, it is suggested that the State should

maintain continuous investigations into economic movements, should " play a much larger part in regulating the initial location of new industries or businesses," should establish compensation funds in industries based on terminable local resources, and should extend the liability of employers for guarding against dislocation of the labour market. The policy of Local Authorities in maintaining social services is also considered.

The second part of the Report contains a more detailed account of population and employment before 1921 and after 1923 and special surveys of iron and steel, coal-mining, iron ore, coke ovens, shipbuilding and engineering, agriculture, and local finance. There are also six appendices, mainly statistical.

This is a most excellent Survey, and it is quite insufficient to say that it is highly creditable to its compilers.

HENRY W. MACROSTY

*Cotton Industry and Trade in China.* By H. D. FONG. (Tientsin : Nankai Institute of Economics. 2 vols. $5.)

RECENT writings on China have stressed the almost complete absence of facts concerning the economic life of that country, and the danger of generalisations based upon the necessarily restricted sample inquiries which are now being carried out by a number of private investigators. Much more, however, is known of the large-scale factory industries than of agriculture or of the domestic industries and, in these volumes, Professor Fong has drawn together a mass of statistical material relating to the cotton industry and has supplemented it, particularly in his discussion of labour conditions, by reference to special investigations, of his own or of other workers, mainly carried out in Shanghai or Tientsin. Whilst it may be objected that the statistics are over-elaborated (one is rarely given an average; it is nearly always the mode, the median and the mean; and at one point the cotton-workers are classified by height and weight) and that there is little analysis of the information as it stands, nevertheless the author has contrived to create a picture which throws much light upon the changes in the world distribution of the cotton industry and upon its probable future trends.

The Chinese factory cotton industry is growing rapidly. In 1931 it employed about 300,000 workers and possessed about 4,000,000 spindles and 30,000 looms, the bulk of the machinery working two shifts of twelve hours in each day. Progress, it is true, has been checked since 1925 because of internal political and commercial disorder, but even so the number of spindles

increased fourfold between 1913 and 1930 and the number of looms threefold. Again, although many of the mills are owned by the Japanese or British, and although these mills are usually larger and more efficient than those operated by Chinese owners, yet, in 1930, the Chinese spindles and looms amounted to more than one-half of the total recorded for the whole country. It is plain that, given the establishment of law and order, a great cotton industry will develop in China catering for the vast home market, which is mainly supplied now by imports or by the products of the hand-looms, and imperilling the Japanese cotton industry in the way in which the Japanese cotton industry has ousted Lancashire goods from many markets.

Perhaps the most original section of Dr. Fong's inquiries is that which deals with labour conditions and the results arising from the impact of a system of industrialism upon workers mainly drawn from agriculture. It can hardly be said that China is suffering any less from industrial revolution than did England in the eighteenth and nineteenth centuries. The average daily wage rate for cotton-workers in Shanghai is 49 cents for a twelve-hour shift; women and children are allowed to work at night; workers are given only two rest days per month; in some mills about one-fifth of the workers are between the ages of eleven and fifteen years. "In some instances contractors obtain young children from the country districts, paying the parents $2 a month for the services of each child. By employing such children in the mills and factories the contractor is able to make a profit of about $4 a month in respect of each child. These children are frequently most miserably housed and fed. They receive no money and their conditions of life are practically those of slavery." In one mill investigated in Tientsin with an average working force of 6,239, there were 2,804 surgical cases dealt with in one year by the mill-hospital, which speaks of the absence of safety regulations.

It will probably be argued that one must see conditions of this kind in their right perspective. It is true that trade unions are beginning to make their appearance, but they are still very weak. It is true that the Factory Act, which nominally came into force in August 1931, provides for an eight-hour day and other reforms, but apparently it is nowhere yet enforced. And perhaps it is true that the standard of living among the industrial workers is higher than among the millions of those living by agriculture. But it is doubtful whether anything can be much worse than the conditions to which Dr. Fong draws attention by

quoting the Report of the Shanghai Child Labour Commission: "Children are mostly employed in the spinning department, and in the great majority of cases have to stand the whole time they are at work. It is difficult to state definitely the lowest age at which the children commence work. The Commission, however, saw many children at work who could not have been more than six or seven years of age. Some of these children are not on the pay-rolls, but are allowed to be brought by their mothers in order that they may be under their care. In many mills the conditions during the night-shift are, according to Western ideas, most unusual. Rows of baskets containing babies and children, sleeping or awake as the case may be, lie placed between the rapidly moving and noisy machinery. Young children, who are supposed to be working, but who have been overcome by fatigue or who have taken advantage of the absence of adequate supervision, lie asleep in every corner, some in the open, others hidden in baskets under a covering of raw cotton."

Other aspects of the Chinese cotton industry are treated in detail. A statistical study of the size of cotton mills shows how very much smaller they are, on the average, than those found in Lancashire. There is also a description of China as a cotton-growing area and an account of the marketing processes in the different sections of the industry.

JOHN JEWKES

*The Economic Tendencies of To-day.* By S. VILJOEN. (P. S. King. Pp. 251. 10*s.* 6*d.*)

THESE chapters on Population, Enterprise, Transport and Power, Organisation, and Policy are based on a wide survey of recent literature, and form an interesting and readable study of their subjects. The use of statistics is careful and selective, and the book, though mainly descriptive, has been compiled with critical judgment.

*History of Greek Public Finance.* By A. M. ANDRÉADÈS. (Athens, 1928.) Translated by C. N. BROWN. (Cambridge: Harvard University Press; London: Humphrey Milford. 1933. Vol. I, pp. xx + 412; 29*s.* net.)

THE original of this translation was reviewed in the ECONOMIC JOURNAL of December 1930 (p. 686). This is described as a "revised and enlarged edition," but the new matter incorporated is not of great quantity or importance. The translation, by the Associate Professor of Classical Languages in the College of the

City of New York, is competent. But the common occurrence of minor verbal alterations in the text, which, so far from clarifying or simplifying the original, are generally unnecessary and sometimes definitely inferior in precision and discrimination, stimulated the reviewer's curiosity to count them in a few sample passages; on pp. 227–31 (text only, excluding footnotes) he counted fourteen, and on pp. 253–4 nine. Frequently these inexactitudes miss the principal implication of the Greek word or phrase; examples can be found on pp. 61, 79, 138, 147, in the common translation of δημόσιον by "state" instead of "treasury" or "exchequer," etc. Sometimes they amount to errors sufficiently grave to make the clause in which they occur pointless or ridiculous, *e.g.*, on pp. 8, 107, 249, 252, 372, etc. The English is not always very happy (*e.g.* "cult budget, "evaluation" for valuation, "quite universally"); in this connection, is it too late to protest against two vulgar solecisms which have over-run American and are over-running English economic literature, namely, the use of "loan" as a verb instead of "lend" and the meaningless use of "per capita"—a technical term of the Roman law of succession, with an entirely different meaning—as equivalent to "per head" or "per caput"? Also, is it impertinent to suggest that a numeration of chapters, sections and sub-sections running consecutively through the book gives greater facility in reference than a numbering from one upwards of the chapters of each Part, the sections of each chapter and the sub-sections of each section?

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*World Economic Survey*, 1932–33. (League of Nations: London, Allen and Unwin. 6*s*.)

THE Survey for 1932–33 continues the similar volume published in September 1932. It gives in a brief compass a comprehensive survey of the major economic problems of the world from the meeting of the Lausanne Conference to the end of July 1932. Prices, production, international trade, tariff policy, business profits, public finance, banking and monetary policy, indebtedness, and international balances of payments are among the subjects covered.

The Survey is carried up to date and the final chapter includes a Report of the Proceedings at the first session of the Monetary and Economic Conference, a description of recent legislation in the United States and a summary of the economic situation at the end of July.

Included in the volume are statistical estimates of the decline in world trade, the movement of business profits during the depression, the total amounts of international indebtedness outstanding and the fall in different classes of production. The various steps taken to remedy the crisis—the progress made in raising prices, adjusting indebtedness, reviving production, and balancing national budgets—are described and measured statistically.

The estimate of the present situation given in the final chapter draws attention to the considerable recovery that has already taken place in many countries; but points out that the problems of international economic co-operation remain to be solved. (*Communicated.*)

## NOTES AND MEMORANDA

### Mr. Robertson on "Saving and Hoarding"

### I

In his article in the Economic Journal, September 1933, Mr. D. H. Robertson has proposed new definitions of these two terms which I should like to examine briefly.

Let us mean by current *income* the value of current output, which, I understand, is what Mr. Robertson means by it. If we define Savings as the excess of income during a period over expenditure on consumption during that period, it follows that Savings are exactly equal to the value of output added to accumulated wealth, *i.e.* to Investment. The sense of Saving in which it is necessarily equal to Investment, *i.e.* the excess of current income over current consumption, let us, for the present, call *Surplus*. In my *Treatise on Money* I gave a definition of Savings which was not the same as Surplus and was, therefore, not necessarily equal to Investment. Mr. Robertson also feels a need for a conception of Savings which is not identical with Surplus and proposes one in the above article. I do not like his conception any more than he likes mine. It may, perhaps, help the reader to decide whether Mr. Robertson's Saving is a useful concept if I explain what appears to be its exact relation to Surplus.

Let us denote Surplus by S′ and Saving, as Mr. Robertson defines it, by S.

S′–S, aggregated over any period of time, equals the difference between one "day's" income at the end of the previous period and one "day's" income at the end of the period in question. Thus its magnitude depends on how long Mr. Robertson's technical "day" is. If his day is short, *e.g.* a week, S′–S over however long a period will always be small. For example, if incomes fall by 10 per cent. during the period and the technical "day" is a week, S′–S is one tenth of a week's income. Even if a slump were to last for years and incomes were to fall to half their previous level, the total excess of Saving over Investment for the whole period could not in the aggregate exceed half a week's income.

Thus, the amount of Saving (in his sense) depends on the length of his "day," and the difference between Investment (or Surplus) and his "Saving" can never be large enough to have practical importance, unless his "day" is a substantial period.

Furthermore, a man cannot know how much he has "saved" during a given period in Mr. Robertson's sense unless he knows how long Mr. Robertson's technical "day" is. For example, let us suppose that a man's income is falling by 1 unit a week, and that he spends during a year an amount equal to his income during that year, then if Mr. Robertson's "day" is two weeks, the man will have "saved" 104 units, since his income in the last two weeks of the previous year was 104 units greater than his income in the last two weeks of the year in question. But if Mr. Robertson's "day" is four weeks, the man will have saved 208 units, since his income in the last four weeks of the previous year was 208 units greater than his income in the last four weeks of the year in question. Thus there is no means by which any of us can tell how much we "saved" last year, until Mr. Robertson vouchsafes to tell us the length of his technical "day."

So I think that for the plain man, and still more for any practical purpose, Mr. Robertson's definition is, if possible, even worse than mine!

Mr. Robertson's definition of his meaning of Hoarding is not so clear as that of Saving. If I understand the above rightly, Hoarding is no longer a statistical measure of the change between a man's cash and his income. A man may increase his cash relatively to his income without hoarding, and diminish it without dis-hoarding. The test is whether he has "taken steps" to increase his cash, *i.e.* whether his increase of cash is the result of activity or passivity on his part. In particular an entrepreneur has not dis-hoarded if he suffers a reduction of cash through selling his output at a lower price than he had expected.

If this interpretation is correct, Mr. Robertson's present definition of Hoarding has, I think, a close relation to changes in the excess of Saving over Investment as defined by me in my *Treatise on Money*.

For if a member of the public (A) hoards, some entrepreneur (B) is in danger of suffering a reduction of cash through not selling his output at the expected price. If B does nothing to redress this situation, B is not dis-hoarding. Presumably, therefore, if to avoid a reduction of cash B reduces his personal expenditure or sells a security, then B is hoarding. If he sells a security to A,

A's hoarding is thereby diminished. If he reduces his personal spending, some other entrepreneur suffers increased losses. Thus the aggregate hoarding during the period for the community as a whole has nothing to do with actual changes in the holding of cash, but is equivalent to the change in the level of business losses ($= -\Delta Q$), as defined by me. Since on my definition business losses are equal to the excess of Saving over Investment, *net* hoarding during the period is equal to the *change* in the excess of Saving over Investment during that period.

If this is correct, it would seem that Mr. Robertson's definition of Hoarding is an alternative way of dealing with the same order of ideas as I attempted to handle by my concept of the excess of Saving over Investment. I am not quite clear whether Mr. Robertson's Hoarding during successive periods can be aggregated over a complete period. If so, it may be that my definition of Saving is equivalent to the sum of Investment and of Hoarding, as defined by Mr. Robertson, aggregated from a base period when business profits may be considered to have been in some sense normal. If so, I feel confirmed in the view that Mr. Robertson's new definition of Saving is not useful. I do not think that there is any practical application for which we require any concepts other than Investment and Hoarding interpreted, in accordance with Mr. Robertson's new definition, as a function, not of changes in cash-holdings as such, but of changes in business profits and losses.

Perhaps I should add that my own use of terms to-day is not the same as it was when I wrote my *Treatise on Money*, and that I do not now consider my analysis in that book to be as clear or as logical as I can make it. But the question of what uses of language and modes of expression are best does not alter the essential character of the fundamental ideas which Mr. Robertson and I are both trying to elucidate. J. M. KEYNES

## II

Mr. Robertson's article on *Saving and Hoarding* was primarily devoted to "explaining and illustrating the meaning" to be attached to "saving." Saving means the excess of income over what is spent on consumption, but the special characteristic of Mr. Robertson's definition is that the period over which income is to be taken and that over which expenditure is to be taken are not identical.

There is an interval, a "day" (not apparently to be identified

with a day in the ordinary sense), " which is finite, but nevertheless so short that the income which a man receives on a given day cannot be allocated during its course to any particular use." A man's disposable income on any day " is thus the income received not on that day but on the previous one." His saving on any day is arrived at by deducting his expenditure on consumption on that day from the income received on the *previous* day.

My first criticism of this definition is that there is a logical flaw in the conception of an interval between the receipt of any item of income and expenditure from it. Money does not preserve its identity on its journey from income through balances to expenditure. The money received as income is merged in the cash balance, and the expenditure is met from the cash balance, and it is not possible to say that any particular disbursement is met out of any particular receipt. The same piece of currency may first be received in payment of income and then be disbursed in payment of expenditure, but that does not imply any but an entirely fortuitous relation between the income and the expenditure in which it is included.

The relation between income and expenditure is a psychological one; the recipient of income regulates his expenditure by his receipts. And it is by no means true that the disposal of income, interpreted in this sense, only occurs at an interval after receipt. Indeed it is more often true that expenditure on consumption is regulated with reference to *future* income than to past income. The purpose of a cash balance is to permit of expenditure being in some degree independent of receipts. It is a capital fund, and, in deciding what drafts to make upon it, the owner considers primarily what his future current receipts are likely to be.

Occasionally, when his actual receipts unexpectedly exceed or fall short of what he anticipated, he will have to arrive at a fresh decision after receipt, and then there will be an interval before the change in expenditure takes effect. Mr. Robertson maintains not merely that there is always an interval between receipt and expenditure, but that the interval is invariably the same. If we seek to know what has led him to this position, we shall find a hint at the end of his article, where he refers to my own monetary analysis.

" If all goods and services," he says, " were sold direct by one consumer to another, consumers' income and outlay could not be different in magnitude; and it would then perhaps be

more evident to Mr. Hawtrey than it seems to be at present that his own treatment involves implicitly the very concept which I have tried to make explicit—namely, the successive existence of a number of short slices of time during each of which the money which appears as income for A cannot also appear as outlay by A (and therefore income for B)."

An example will elucidate the difficulty which has, as I think, brought Mr. Robertson to this view. Suppose that consumers' income and consumers' outlay are initially both equal to $S$. Let people start saving an amount, $X$, per unit of time, and let capital outlay remain unchanged, so that there is an absorption of cash equal to $X$ and consumers' outlay is reduced to $S - X$.

Assume (as Mr. Robertson does) that "a decline in the demand for a group of commodities is met not at all either by a restriction of output or by a restriction of sales and an accumulation of stocks, but entirely by a reduction of prices sufficient to market the original output" (p. 401). Then the demand for commodities has fallen from $S$ to $S - X$. Therefore the price level has fallen in the proportion of $S - X$ to $S$. But that means that the total received for the output of goods has fallen from $S$ to $S - X$; the consumers' income is only $S - X$.

But then, if the consumers' income is no more than $S - X$, and people save $X$, the consumers' outlay is $S - 2X$, and by the same reasoning we can prove that the consumers' income must be $S - 2X$.

An *impasse!*

Mr. Robertson's way out is to place the consumers' income in one "day" and the corresponding consumers' outlay in the next. The diminished consumers' income arises on the *second* day, and is no longer in contradiction with the undiminished consumers' income on the *first*. On the first day consumers' income $= S$. This income only falls to be spent on the second day. Since $X$ of it is saved, and only $S - X$ is spent, the proceeds of sale of the community's output on the second day are only $S - X$. In other words, the consumers' income for the second day is $S - X$, and that is what is available to meet the consumers' outlay on the third day. If $X$ is once again saved, the consumers' outlay on the third day is $S - 2X$.

But in reality the difficulty which Mr. Robertson encounters is of his own making. It arises entirely from his assumption that there is no accumulation of unsold output. That implies that sales are equal to output; and, since sales are equal to consumers' outlay and the selling value of output is equal to consumers'

income, it follows that consumers' outlay is equal to consumers' income. (It will be remembered that we are assuming capital outlay to proceed unchanged.)

The *impasse* arose because the appearance of a discrepancy, $X$, between consumers' income and consumers' outlay is in contradiction with this assumption. Suppose that the consumers' outlay is reduced by saving from $S$ to $S - X$, and that traders endeavour to sell off the whole of their output and avoid the accumulation of unsold goods by reducing prices in the ratio of $S - X$ to $S$. If the traders reduce their outlay in their capacity as consumers to the same extent as their income, neither this reduction of prices nor any other will ever achieve their object. For the reduction of prices itself reduces demand.

According to Mr. Robertson's solution, when the consumers' outlay is falling by $X$ every day, the diminution in the entrepreneurs' income on any day is only reflected in their expenditure on the succeeding day, so that the entrepreneurs on any given day will always be spending $X$ more than their income. If one class of people, by saving, spends $X$ less than their income, and another class spends $X$ more than their income, the result is that, on the whole, consumers' outlay will be equal to consumers' income. So the contradiction is avoided.

It is not necessary to assume a *uniform* interval between receipt and disposal of income. That may be an analytical convenience, but, in order to avoid the *impasse*, all that is necessary is that there should be a sufficient lag of the decline in consumers' outlay on the whole behind the decline in consumers' income to offset the discrepancy between them arising from the absorption of cash.

Given that condition, it is theoretically *possible* so to adjust prices that there is no change in stocks of goods. But why does Mr. Robertson persist in adopting this hypothesis? It is utterly out of accord with the facts of practical life. It implies that retail prices are exactly and instantaneously adjusted to any change in demand *every day*. The introduction of so extravagant an assumption places all his analysis on an abstract plane from which it cannot be redeemed till the assumption is modified.

Perhaps his purpose is to simplify the analysis, and to introduce the more complicated and realistic assumption at a later stage. But his analysis is not at all simplified. On the contrary, he is led into unnecessary complications.

If the assumption that there is no accumulation of unsold output be abandoned, the *impasse* never arises at all. It is then perfectly possible for consumers' income and outlay to differ.

Let consumers save $X$, so that consumers' outlay falls short of consumers' income by $X$. The result is that goods to the amount of $X$ remain unsold. The production of these unsold goods generates incomes equal to their value at existing prices, and the incomes are paid by a release of cash from balances (reinforced, if need be, by bank advances). It is likely that there will follow a fall of prices and a reduction of output, but only after an interval.

Mr. Robertson says, in the passage I have already quoted, that "if all goods and services were sold direct by one consumer to another, consumers' income and outlay could not differ in magnitude." That hypothesis does not preclude the accumulation of unsold goods. Anyone who is producing material products may fail to sell a part of his output. In that case he has added his unsold output to his possessions; it represents an addition to his capital, provided out of income. Such an application of income is part of the consumers' outlay.

This case differs from that of the entrepreneur who incurs costs on buying or producing goods for sale, for he only becomes the owner of the *net* value of the unsold goods, after setting off the costs on the other side of his balance sheet. It is only where the producer incurs no such costs, and becomes the owner of the unencumbered value of the unsold goods, that the whole value of the goods can be regarded as accumulated out of his income, so that outlay is equal to income.

Mr. Robertson asserts that in my monetary analysis when "consumers' outlay exceeds consumers' income, the additional sums received by entrepreneurs are (somewhat arbitrarily) excluded from the concept of income till they are 'drawn out' of the business by its owners."

He is under a complete misapprehension. The very page he refers to (*Art of Central Banking*, p. 93) contains the passage, "so much profit as they do not draw out is left in the capital account, and must be reckoned as an investment of a part of their income." And a little further back (p. 91), "the proprietors, whether shareholders or partners, will draw out so much of the profit as it may be decided to distribute, but the *whole* of the profit belongs to them, and any undistributed residue is part of their incomes. If the residue is kept in the business and credited to reserves it is income invested in the business and counts accordingly both as consumers' income and as consumers' outlay."

I do not know how I could have been more explicit. But,

if Mr. Robertson felt any doubt on the subject, he could have turned to the Algebraical Note, and would have found (p. 113) that the expression for consumers' outlay includes an item for profit reinvested.

In the article I wrote in the ECONOMIC JOURNAL for September 1926, criticising Mr. Robertson's *Banking Policy and the Price Level*, I referred to his assumptions as to the stages by which people carry out the strengthening of their cash balances under the influence of inflation. "Mr. Robertson assumes," I wrote, "that $M$ [the unspent margin] is of the form $a + b\,t$ (where $t$ is the time) and that $P$ [the price level] increases in arithmetical progression by discontinuous steps, always remaining fixed for a period equal to $K$ (where $K$ is the ratio of the unspent margin to the consumers' outlay). These assumptions serve well enough for an exercise in the integral calculus, but seem too remote from practical facts to deserve discussion."

Mr. Robertson now quotes the concluding sentence as if it applied, not to the particular assumptions referred to, but to the "step-by-step method of analysis." That is a misunderstanding. I have no objection to Mr. Robertson's method of analysis by "days." It may well be a closer approximation to the truth for some purposes than an assumption of perfect continuity. There may sometimes be a convenience in dealing with a function that can be represented by a smooth curve running through successive days, but that is only an analytical device. It may be pointed out, however, that the integral calculus does not require a continuous function for its operations. Any function with a finite number of discontinuities can be integrated over a range at every point of which it has a definite value. My own analysis accords just as well with discontinuity as with continuity.

So far as the assumptions referred to in the passage quoted above are concerned, I observe that Mr. Robertson makes them once again (p. 409), and introduces them with the phrase, "there is a certain simplicity, if no more, in supposing . . ." I do not think the "if no more" obliges me as yet to treat them as anything but an algebraical device.

Besides defining savings, Mr. Robertson defines lacking and hoarding.

With regard to hoarding, Mr. Robertson has modified the significance which he attached to that term in his *Banking Policy and the Price Level*. In that work (p. 46) hoarding occurs when the money a man saves is added to his existing money stocks. Now, however (p. 400), "a man is said to be hoarding

if he takes steps to raise the proportion which he finds existing at the beginning of any day between his money stock and his disposable income." The mere increase in his money stock does not constitute hoarding; the essential condition is an increase in the *proportion* of money stock to disposable income.

This change does not seem to be an improvement. The daily income of an individual is a very fluctuating amount, and on the majority of days is likely to be zero. (For "disposable income" is income *received*, not income *accrued* (p. 399). Indeed otherwise it could not have the relations, which Mr. Robertson attributes to it, with the cash balance.) On any day when the disposable income is zero the whole of the cash balance is to be regarded as hoarded. But how are we to determine whether there is any hoarding on a day when the disposable income has risen from zero to £10? Even if the whole £10 be held unspent, the proportion, from being infinite, has become finite.

And even if we disregard the case where disposable incomes vanish to zero, we cannot know whether any group of people are hoarding or not till we know what each of them is doing separately.

Let us suppose that six men are receiving incomes of £10 a day each, that five of them, suffering a reduction of income to £8, reduce their cash balances from £10 each to £9, and that the other one, with an increase of income from £10 to £20, raises his balance from £20 to £30. Their total incomes remain unchanged at £60, and their balances have risen from £70 to £75. But nevertheless they have *dishoarded* £5, because the hoarding of the five who have reduced their balances is more than offset by the dishoarding of the one who has increased his.

The definition of "lacking" has also been revised. Lacking occurs when a man's "consumption on any day falls short of the value, at the time of its receipt, of the income which he has at his disposal on that day." "Automatic" lacking occurs when the purchasing power of the disposable income is less than on the preceding day, when it was received. This last application remains the same as in *Banking Policy and the Price Level.* In my criticism in 1926 I pointed out that "automatic lacking, when it occurs at all, never lasts for more than *one day* at a time. . . . It requires a discontinuous rise of prices to be interposed between the receipt of a day's income and its disbursement." And I drew the conclusion that "for practical purposes the ideas of automatic stinting and automatic lacking are completely nugatory." Mr. Robertson quotes Mill, Walras and Wicksell on forced saving, and says he cannot believe that any of these

writers would have endorsed my opinion. But what I described as nugatory was Mr. Robertson's own definition of automatic lacking.

Mr. Robertson applies the term to the case of "the expenditure of newly-created money by new work people, etc., brought into employment to build up additional working capital," and distinguishes it from "increased Saving and Investment by the entrepreneurs in whose favour contracts have been distorted" (p. 411).

At whose expense is the additional working capital provided? According to Mr. Robertson, if, at the outset, the income and expenditure of the community balance at 1,000,000 currency units a day, and on a given day new money begins to be created at the rate of 100,000 currency units a day, the price level will rise 10 per cent. on the next day. The 100,000 units of working capital will have been obtained at the expense of the people whose purchasing power, when they received it yesterday, was 1,100,000 units, and to-day, when they spend it, is the equivalent of 1,000,000 only.

But this adjustment in the space of one day would not occur in practice. In the first instance the additional 100,000 units would probably be spent on buying goods from stock without any rise of prices. If stocks of finished goods on sale are equal to one month's consumption or 30,000,000 units, their reduction by 100,000 units would be negligible.

If the creation of new money continues for a considerable period, the diminution of stocks of goods will become perceptible. Prices will begin to rise. Alongside the rise of prices due to the increase in the amount of money in circulation, a *temporary* rise is further called for to enable traders to reconstitute their stocks. Prices must be high enough to restrict sales to something less than output. It is through this temporary rise of prices above replacement value that the additional working capital is paid for. The holders of the depleted stocks of commodities are enabled, as it were, to levy a tax upon the consumer to make good the deficiency.

Here again Mr. Robertson's analysis is vitiated in its application to practical life by the assumption that the retail price level is always instantaneously adjusted to any variation in demand.

R. G. HAWTREY

## III

"Some of the jury wrote it down 'important' and some 'unimportant.' Alice could see this, as she was near enough to look over their slates: 'but it doesn't matter a bit,' she thought to herself."—*Alice in Wonderland.*

I

I was perhaps wiser to avoid, in my *Banking Policy and the Price Level*, all use of the perilous word Saving than I was to attempt, in my article in the September JOURNAL, to give it a meaning which should be free from the oddness of Mr. Keynes' meaning and yet enable us to continue to speak of depression being caused by "an excess of saving over investment"—a phrase which has proved to possess a wide popular appeal. But having created this new monster, I must offer a word in his defence.

For the world envisaged in my article, Mr. Keynes' objection may be illustrated in a precise form as follows. Investment being zero, let the income of entrepreneurs be reduced, as a result of Spontaneous Saving by the public spread evenly over a year, by an annual rate $x$, *i.e.* by a daily rate $\frac{x}{n}$, where $n$ is the number of "days" in a year. Let it be supposed that on each day entrepreneurs have spent their previous day's income, *i.e.* have neither saved nor dissaved. Then, to produce the observed result, the daily saving of the public must be $\frac{x}{n^2}$, and its aggregate saving during the year $\frac{x}{n}$, a quantity which becomes very small as $n$ becomes very large—too small, Mr. Keynes argues, to have any practical importance. [The aggregate saving in Mr. Keynes' sense is $\frac{x}{n^2}(1 + 2 + 3 + \ldots + n) = \frac{x}{2} \cdot \frac{n+1}{n}$, which approximates to $\frac{x}{2}$ as $n$ becomes very large.]

To this argument I would reply as follows. First, what is important or the reverse depends on what problem we are interested in. As Mr. Hawtrey was the first to show me, the difficulty about Mr. Keynes' "saving" has always been that while setting out to be an expression for a causal factor, it ends up by being simply a quantitative measure of results; Mr. Keynes' "excess savings" do not *cause* losses, they—for the most part—*consist of* losses. If what we are interested in is the *causation* of depression, the magnitude of the aggregate of Saving in my sense is no index of its importance. Behold how great a

matter a little fire kindleth—what violent physiological changes can be wrought by a small catalyst or hormone.

Secondly, the force of this consideration is increased if we take account, as we must, of the difference between Spontaneous and Induced Saving. For the case analysed above is an extreme one, of the type to which Mr. Keynes had already drawn attention in his metaphor of the Danaids' sieve (*Treatise*, I. 139). In fact, as I have argued in § 10 of my article for the opposite case of inflation, retarding influences are likely to be set to work. Let us take for the sake of illustration what I have there called the "standard" case, and let us suppose that the year consists of $q$ complete circulation periods, so that $n = qk$. *Ex hypothesi* the daily rate of entrepreneur income stands in the $q^{\text{th}}$ period of the year at $\frac{x}{n}$ below its old level. It will be found that the daily rate of Spontaneous Saving by the public required to produce this result is $\frac{x}{nq}$; their aggregate Spontaneous Saving over the whole year is $\frac{x}{q}$,—a quantity comparable in magnitude to the reduction in the *annual* rate of income, and independent of the length of the day.

It is perfectly true that on all except the first day of each circulation period this Spontaneous Saving is matched by Induced Dissaving of entrepreneurs, so that Mr. Keynes' proposition remains valid—the aggregate amount of Saving of all kinds done during the year is no more than $\frac{x}{n}$. But if what we are interested in is causation, this fact seems to be of less interest than the fact that the *fons et origo malorum*, the Spontaneous Saving of the public, adds up to the substantial quantity $\frac{x}{q}$.

II

§ 1. I must express regret to Mr. Hawtrey for having misread him in two respects. First, I took as of general application certain criticisms which were only intended to be directed towards my "standard case." His explanations make it plain that he does not object to my "step by step" method, nor to the conception of a lag. Secondly, I took him to mean that if, at the time a part of past profits is paid out in dividends, etc., another part is reinvested in the business, the latter no less than the former counts as consumers' income. What he *does* mean is that all

profits count as consumers' income as soon as goods are sold, or even before, and that that part of them which is not forthwith paid out in dividends, etc., counts also as consumers' outlay. The divergence between consumers' income and consumers' outlay is thus even more closely bound up with the phenomenon of unsold stocks than I supposed; but this divergence does not play the essential part in Mr. Hawtrey's analysis that I supposed.

On the other hand, Mr. Hawtrey has, I think, misconceived the nature of my day. I do not maintain "not merely that there is always an interval between receipt and expenditure, but that the interval is invariably the same." The day is the minimum period that *can* elapse between receipt of income and its expenditure, not the actual period so elapsing. Put otherwise, it is the interval between receipt of income and its disposal—disposal consisting *either* of expenditure *or* of adding to balances. I am not persuaded that this conception contains any logical flaw, and I find it easier than Mr. Hawtrey's conception of consumers' outlay, which is defined as expenditure "out of income," though the income which it is "out of" may apparently not yet have been received.

Mr. Hawtrey has attributed to me an arithmetic of Hoarding in which I have not indulged! He thinks I ought to hold that his group has dishoarded £5, on the ground that five of them have hoarded £1 each and the other has dishoarded £10. But that is to combine an absolute and a proportional conception of Hoarding in a way of which I think I am innocent. The group has hoarded, as common sense suggests: weighting the $k$ of each sub-group in each period by its income, we find that K for the whole group has risen from $\frac{1 \times 50 + 2 \times 10}{60}$ to $\frac{\frac{9}{8} \times 40 + \frac{3}{2} \times 20}{60}$, *i.e.* from $\frac{7}{6}$ to $\frac{5}{4}$.

§ 2. But Mr. Hawtrey's fundamental objection to my analysis is that it is conducted on a very remote plane of abstraction. He concentrates on two instances of this, though he might, I am afraid, have found others. (1) I have ignored the fact that even in equilibrium the income of an individual is received in jerks and not at a steady daily rate, so that his "proportion" fluctuates violently, and only maintains a steady level when averaged over a period of time. There is force in this objection, because in real life the average level of $k$ depends partly upon the degree of this irregularity in the receipt of income. I think I may plead that no study of the disturbance of economic equilibrium is free from the objection that the "equilibrium" itself is really a state of

oscillation; but I am afraid I am not ready with a set of verbal amendments which will satisfy Mr. Hawtrey in this respect, and enable us to exhibit the phenomena of disequilibrium as the result of the hoarding of various persons becoming—not positive or negative instead of zero but—greater or less than what is normal for the phase of the normal oscillation on which the disturbing influence impinges.

(2) I have treated output—the thing which gives rise to income—as identical with sales, and have ignored the part played in real life by the accumulation or decumulation of retailers' stocks. Did I not do so, Mr. Hawtrey says, the *impasse* which has bothered Mr. Keynes and myself would not arise. *If* my assumption were true, consumers' income, he agrees, would be the same as consumers' outlay. The initiation of the vicious circle could no longer be exhibited in terms of the divergence between them, and we should be thrown back on the lag conception in one form or another.[1]

Now I think there is room for argument about Mr. Hawtrey's views on the relative practical importance and the time-sequence of the various possible methods of response to an alteration in consumers' demand—alteration of prices, alteration of output and alteration of stocks. But I would plead rather that analysis on my plane of abstraction has the advantage of setting in high relief the two things which analytically are of fundamental interest—first, the way in which an act of economy on the part of individuals can go to waste without eventuating in the formation of material capital; and secondly, the nature of the forces diffusing the operation of this process through time. The first is no doubt now an old story, though it has not always been so; the second, in view of the way in which Mr. Keynes and Mr. Kahn have formulated the problem, still in my opinion needs emphasising—at all events in Cambridge! Mr. Hawtrey does not find my analysis helpful in these respects: some others, I hope, may have done so; and there I am afraid we must leave it!

D. H. ROBERTSON

[1] The form in which Mr. Hawtrey suggests its application (p. 704) does not seem to be applicable to the case which first interested me (*Banking Policy and the Price Level*, 1932 ed., pp. 49 and 63) and which still seems to me illuminating—the case in which a whole community of producer-consumers (assumed not to make for stock) simultaneously practises Hoarding.

In the case of such a community which *does* make for stock, consumers' income and consumers' outlay both remain unchanged when the Hoarding begins, as Mr. Hawtrey shows: their behaviour therefore gives us no indication that disequilibrium has set in.

## A Note on Australian Finance

With its promise of remissions in taxation amounting to £7·5 m., and increases in expenditure of £1·7 m., the Commonwealth budget is in striking contrast to most budgets to-day.

There are two main reasons for the improvement: first, the degree of recovery, stimulated largely by Australia's bold policy,[1] and second, the somewhat favoured position of the Commonwealth Government as compared with the States. During nearly the whole of the financial year 1932–33 export prices in sterling were still about 55 per cent. below their 1928 level. Nevertheless, some recovery in the general economic position had taken place, and the budget closed with a surplus of £3·5 m., despite the original estimate of a deficit of £1·3 m., and special relief expenditure to primary producers of £2·25 m., and concessions to taxpayers of £1 m. The main sources of the improvement in the budget were increases in customs and excise duties, sales tax, and income tax. All these clearly indicate an increase in income and spending power. Imports were £stg. 57 m., compared with £stg. 45 m. in the previous year. With exports at £83·5 m., there was sufficient surplus available to meet overseas obligations. We may assume, therefore, that imports were not on the whole excessive, and the improved receipts from the sales tax may similarly be regarded as evidence of a slight but sound improvement in internal trade. With export prices now about 30 per cent. above their level during the greater part of last financial year, the improved budget position rests upon a fairly secure foundation.

The State budgets, on the other hand, have not shown such buoyancy. At the Premiers' Conference held early in June, it was agreed to allow total deficits of £8·5 m., made up as follows:

| | £000. |
|---|---|
| New South Wales | 3,950 |
| Victoria | 800 |
| Queensland | 1,850 |
| South Australia | 1,100 |
| Western Australia | 750 |
| Tasmania | 50 |

The total is £1·5 m. less than the estimated deficits presented to the Conference, and more than £10 m. below the estimates

[1] See my articles in the Economic Journal, December 1931 and December 1932.

made on the same date of the previous year. By retaining taxes and charges for business enterprises at the levels ruling in 1931–32, and by transferring some of the Commonwealth surplus to the States, it would have been possible to balance all budgets, including the sinking fund payments of approximately £8 m. This would have been "sound" finance, but it would have offered little encouragement to enterprise. The Loan Council wisely decided to allow State deficits of £8·5 m., but these must be set against sinking fund payments of £8 m., which are statutory under the Financial Agreement. It has been possible for some of the States, notably New South Wales, to grant substantial remissions in taxation and railway freights, and yet to live within the limits fixed by the Loan Council. It should be added that any savings on overseas conversion loans will go to reduce the deficit. Maturing loans to the amount of £22 m. were converted in 1932 and early 1933, and £49 m. out of £84 m. of "callable" loans had also been converted up to the end of October 1933. The total savings amounted to nearly £stg. 1·3 m., or £A. 1·6 m.

Financial policy during the crisis rather favoured the Commonwealth in comparison with the States. The main burden of unemployment and of losses on State enterprises fell upon the States, whose avenues for new taxation were rather limited. On the other hand, the reductions in wages and salaries and the general retrenchment made great economies possible, and the fixed payment of £7·6 m. for interest on the State debts by the Commonwealth remained unchanged. The Commonwealth, in fact, made total grants of nearly £12·5 m. to the States in 1932–33, compared with £11·5 m. in 1929–30. But the Commonwealth benefited by (*a*) the concession of £stg. 5·5 m. on account of the war debt, (*b*) its high proportion of internal to external debt, and (*c*) its ability to impose new taxes like primage and sales tax to compensate it for the loss of revenue. The States claim that a further general adjustment in financial relations of the Commonwealth and the States is required, and this problem will doubtless be considered at the Constitutional Convention early next year.

In general, we may say that Australia is budgeting for a moderate deficit as a whole, relying upon the recovery that will follow the rise in export prices to restore revenue. The total revenue of the States, other than Commonwealth subsidy, is approximately £100 m., and a general recovery of less than 10 per cent. would balance all budgets, including the payment of sinking fund. This is not an unlikely development, and the

budgetary and banking policy is likely to encourage a modest degree of recovery. The following points are important:

(*a*) The State reductions in railway freights and unemployment tax on income, and the Commonwealth reductions in company taxes, general income tax, sales tax and primage duties, all make for reduced costs of industry and greater spending power in the hands of consumers.[1]

(*b*) The reduction in primage duty and the adjustment of the tariff on British imports means a maximum fall in tariff duties on these goods of 17½ per cent. In a recent inquiry the Tariff Board found that Australian costs, even in the depreciated currency, had fallen more than British costs during the depression. It recommended a reduction in all *ad valorem* duties of one-fourth, to a maximum of 12½ per cent. The reduction was not to apply to goods from countries with currencies depreciated substantially more than sterling. The Government has applied the recommendation to British goods only. This is a move in the right direction, though it will not satisfy critics of tariff policy, who hold that, apart from the effect of exchange, the tariff is on the whole too high.

(*c*) The Loan Council continues to arrange for the finance of Government deficits through Treasury bills, though it will agree to fund bills if the market can supply long-term loans at low rates in excess of the sums required for the annual works programme. This is a happy compromise on banking and financial policy that was the subject of some controversy between the Commonwealth Bank and the Governments for a while at the end of last year.

(*d*) The Government has cleared away all doubts as to its monetary policy. After referring to the unfavourable effects of an over-valuation of sterling upon Australia as a debtor country, the Treasurer stated that when the ultimate return to the gold standard takes place, "it is import-

[1] The reductions in Commonwealth taxation are as follows:

| | £000. |
|---|---|
| Companies' tax | 585 |
| Life Assurance Companies | 710 |
| 15 per cent. Personal Exertion reduction | 200 |
| Fall from 10 per cent. to 5 per cent. in special tax on property | 1,110 |
| Land tax | 400 |
| Reduction in primage duty, sales tax and customs duties | 4,330 |

With some minor additional concessions, the total in a full year will amount to £7·5 m.

ant that we should retain the right to fix our monetary unit at a point consistent with our own price level at the appropriate time." Australia is therefore not to make heroic efforts to return to parity with sterling, but will continue to use her freedom of action in monetary policy with discretion. The relation of the Australian pound to sterling will be determined by the level of prices at which export production can be carried on with reasonable profit.

Some restoration of expenditure, particularly for old age pensions and the lower salaries in the Commonwealth public service, is provided for in the budget. It is desirable that improving economic conditions should be followed by the elimination of the most oppressive forms of economies. Taking the budget as a whole, and the general financial and economic policy of the Commonwealth, it will be generally agreed that the Government is succeeding in combining political expediency and economic principle to give relief where it is most needed and most likely to encourage enterprise.

D. B. COPLAND

*October* 30, 1933.

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## OBITUARY

### VLADIMIR J. GELESNOV

VLADIMIR J. GELESNOV, one of the most distinguished of contemporary Russian economists, who worked both under the old regime and under the new, died suddenly on the 30th August, 1933, at the age of 64. His academic career began in Kiev, where he was appointed to a teaching post in 1896. He early acquired exceptional popularity amongst the students, and his public lectures were largely attended, being afterwards published under the title of *Sketches on Political Economy*, a book which ran through many editions in Russian and was translated into German. His teaching was mainly directed to labour problems and was strongly influenced by Marxist doctrine. Whilst, however, he accepted the greater part of the Marxist doctrine, he was not a Marxist in the strict sense of the word, but was inclined rather to a synthetic theory of economics, an inclination which was reflected in his distinguished critical study *Main Tendencies in Wage Theory*, published in 1904.

In 1905 he left Kiev for Moscow, where he taught at the Moscow Agricultural Academy for the next twenty years, also

lecturing in Moscow University at the Commercial Institute and at the Extension University founded by Shaniavsky. He was one of the editors of Granat's *Encyclopædia* (A. T. Granat also died recently—in September 1933). Gelesnov, however, never restricted himself solely to academic activities, taking an active part in the Co-operative Movement, especially in the drafting of the project of the Moscow–Närodny Co-operative Bank.

He was a leader in the proceedings and publications of the Cuprov Economic Society; and after the revolution he paid much attention to monetary reform as well as other matters. The controversy concerning the definition of economic goods and the boundaries of economics induced him to write interesting articles in the Russian Journal *Voprosy Konjunctury* and in the *Archiv für Sozialwissenschaft* (B. 57, 4, 3: "Ueber das Naturale und das Wertmässige in den wirtschaftlichen Erscheinungen").

Yet perhaps his deepest interest lay in the history of economic thought. He published a voluminous investigation on the History of Economic Doctrines in Ancient Greece, one of the best works on that question. After the revolution he undertook a monumental work on the History of Russian Economic Thought —a field almost untrodden hitherto. He has unhappily died before he had completely finished this most interesting scientific undertaking. Large parts of this work, however, namely, the sections on the Russian Agriculturists of the eighteenth century, and on Financial and Economic Questions in the first third of the nineteenth century, were almost prepared for the press. Some of the results of his research were also published in his article on "Recent Russian (not Marxist) Theoretical Literature" in the *Wirtschaftstheorie der Gegenwart* (edited by H. Mayer, B. I. 1927).

Russia has lost in him one of her finest economists and historians of economic theory, and his numerous colleagues and disciples a beloved and highly esteemed friend.

T.

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## CURRENT TOPICS

THE following have been admitted to membership of the Royal Economic Society:—

| | | |
|---|---|---|
| Abbell, M. | Armitage, L. B. | Azikiwe, B. N. |
| Abrams, J. J. | Armstrong, W. B. | Bamford, A. E. |
| Albery, A. E. | Arur, S. R. B. | Banks, W. L. |
| Alison, C. A. | Austin, F. W. | Barlow, A. S. |

Barrie, A. B.
Bates, A. F.
Baxter, A.
Bell, S.
Bernardi, Dr. M. de.
Bhabha, C. H.
Bond, E. C.
Breen, L. E.
Briggs, A.
Buchanan, O. C.
Buchett, P. J.
Buckland, W. R.
Butterworth, G. N.
Calver, J. W. A.
Carlton, F. B.
Carruthers, T. B.
Caunce, C. W.
Chavero, A.
Clark, C. G.
Clarke, D. K.
Cohen, M.
Collado, E. G.
Cooper, C.
Cormack, L. J.
Cotter, R. G.
Cowles, Alfred.
Craig, J. I.
Cresswell, L. E.
Creswell, M. J.
Crivelli, R. L.
Cunliffe, A.
Dacey, W. M.
Darrall, Rev. C. N.
Davies, Rev. D. J.
Deleay, S.
Desai, G. L.
Dey, S. K.
Dixon, R. S.
Dobson, G. A.
Dravid, N. K.
Duponsel, P. de la H.
Dutta, B. B.
Eastwood, F. H.
Edwards, A.
Elias, A. H.
Ethell, A.
Exelby, H. R.
Fairweather, W. L. B.
Farmar, G. A.
Financial Attaché of the French Embassy in London.
Gangopadhyay, B.
Gardiner, F. L.
Garrard, C. C.
Gartside, L.
Giffin, J. H.
Gilbert, J.
Gilbert, J. C.
Gilbert, S. H.
Gilchrist, P.
Gonsalves, C. E.
Goodwin, Rev. E. B.
Goudriaan, Jr., Prof. Dr. I. J.
Griffith, T.
Groom, F. E.
Halls, F. S.
Ham, Prof. W. T.
Hare, O.
Harpham, W.
Hayne, Miss L. D.
Helps, E. H.
Hewlett, J. H.
Hill, A. J. H.
Hillmer, G. P.
Holmes, R.
How-Martyn, Miss E.
Huang, T. E.
Hunter, W. E.
Hutton, D. S. S.
Jackson, J. D.
Johnson, T. E.
Johnston, J.
Jones, A.
Joyce, G. J.
Jutila, Prof. K. T., Ph.D.
Kakoyannis, G. E.
Kalyanasundram, T.
Kamat, C. M.
Kanga, A. F.
Kavanagh, B.
Kemény, Dr. D.
Kettle, D. F.
Khare, V. L.
Khérian, Prof. G.
Kong, J. G.
Laight, J. C.
Lattimer, Prof. J. E.
Lawrie, R. M.
Lea, A. L.
Leedale, S. H.
Lemon, D.
Linders, Prof. F. J.
Lloyd, D. M.
Lodge, J. E.
Low, C. H.
Lubin, Dr. R.
Lumsden, B. S.
Lush, A. J.
Madge, D. J.
Marshall, W. A.
Martin, W. S.
Matthews, S. A.
Maverick, Prof. L. A.
Mayer, Dr. Hans.
Mazumder, R. N.
Merrifield, R. S.
Michael, Dr. H.
Milligen, J. H. C.
Mitra, S. C.
Montgomery, R.
Nagle, J. C.

Naik, S. R.
Nalaseth, J. M.
Nathan, J. J. G.
Nayak, P. S.
Neider, Dr. H.
Nelson, B.
Newman, T. S.
Oakley, H. W.
O'Keefe, J. A.
Ong, Ho Seng.
Pahwa, S. S.
Pall, Dr. M. S.
Panday, F. R.
Parker, J. S. F.
Peacock, R.
Pezzani, H. M.
Pierpoint, C. T.
Potter, P. S.
Rathbone, B. L.
Read, A. W.
Redfern, M. G.
Rez, A.
Rivers, J. H.
Roberts, H. C. R.
Rolfe, A. G.
Sadgrove, W. A.
Samson, H. G.
Sethna, M. J.
Shackle, G. L. S.
Shelley, H.
Sheppard, K.
Sherratt, Rev. J.
Sidiki, H. A.
Singh, D.
Smith, L. M.
Smithies, A.
Srikantaiya, S.
Staehle, Dr. H.
Sterling, H. H.
Subrahmanyam, N. V.
Sufian, M. M.
Swaine, G. B.
Symons, W. G.
Tarachand, G'M. F.
Tarrant, R.
Tasker, R. E. N.
Tate, W. E.
Thompson, E.
Thomson, J. R.
Thucker, V. J.
Vooys, Prof. I. P. de.
Wallace, A. T.
Warren, D. J.
Watt, Lieut. J. H. S.
Weitzner, E.
Whelehan, J. K.
White, E.
White, E. R.
White, H. J.
Whitehead, G.
Wilbé-Jones, Rev. K.
Wilson, Capt. L. E.
Winram, G. K. W.
Wood, J. H.
Wood-Simons, Miss M.
Yu, Tsaiyu.

The following have compounded for life membership of the Society :—

Banarji, B. K.
Bashir, S. M.
Berridge, Dr. W. A.
Cairncross, A. K., Jr.
Charles, A. G.
Cheang, K. Z.
Evans, A. A.
Goodall, F. H., M.B.E.
Hart, W. T.
Jeffrey, J.
King, F. N.
Marquand, H. A.
Marvin, D. M.
Massey, P. H.
Mills, R. A.
Minoletti, Dr. B.
Morgan-Jones, G. P.
Narayanan, V.
Neubauer, Dr. J.
Patil, V. N.
Rahn, Dr. R.
Smith, J. McD.
Spafford-Jones, G. W.
Suviranta, Dr. B.
Vestey, The Honble. S.
Walker, E. R.

The following have been admitted to Library membership of the Society :—

Agra College Library. (Composition for fifteen years.)
Birmingham Public Library. (Composition for fifteen years.)

Freiburg University. (Composition for fifteen years.)
Handelshogskolan i Göteborg.
Ilford Central Library.
Istituto Nazionale delle Assicurazioni, Rome.
London School of Economics. (Composition for fifteen years.)
Mysore University Library.
New College, Oxford. (Composition for fifteen years.)
New York Public Library.
North-Western Polytechnic Library, London.
Sarah Lawrence College Library, Bronxville, New York.
School of Commerce and Finance Library, St. Louis University.
State Teachers College Library, New Jersey.

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We much regret to announce the death of Dr. F. Bernis of the University of Salamanca, for many years past the Society's Correspondent for Spain.

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At the Leicester Meeting of the British Association (September 6–13), Professor J. H. Jones, whose address on "The Gold Standard" is printed above, presided over the deliberations of Section F (Economic Science and Statistics). The contributions to the proceedings ranged over a wide field, including a survey of "The Economic Position of Burma" by Sir George Buchanan; an account of "The Economic Theory of Patent and Copyright Law" by Professor Arnold Plant; an examination of "Types and Supply Price of the Entrepreneur and Business Administrator" by Professor Sargant Florence, and a discussion of "The Problem of Business Recovery" by Mr. E. L. Hargreaves. Sir Arnold Wilson spoke on "The Effect of Suez Canal Dues upon Inter-continental Trade" and demonstrated that the high tolls of the Suez Canal were tending to divert traffic from this route. A topical and valuable survey of the work of the new Development Boards was contributed by Professor Hallsworth, whilst other papers dealing with matters of topical interest were those of Mr. J. Sykes on "Public Expenditure and Public Works" and of Mr. Gilbert Walker on "A Rational and Economic Division of Function between Road and Rail." In addition there was a discussion on "Technological and Economic Progress" opened by Mr. R. F. Harrod, Professor J. A. S. Watson and Dr. Fenelon.

In the afternoons there were four sessions (Section F*) dealing

with problems of business organisation and administration. The first of these sessions was devoted to "Organisation as a Technical Problem"; the contributors being Major L. Urwick and Mr. A. B. Blake. During the second session, papers were read on "The Rôle of Accountancy in Scientific Management" by Professor Annan and Mr. F. de Paula. The psycho-physiological requirements of modern factory equipment formed the subject of the third session during which Dr. G. P. Crowden and Dr. G. H. Miles read papers. In the last session Mr. L. Neale and Mr. G. I. Akeroyd discussed the subject of distributive organisation.

In addition to the proceedings of Section F it may be of interest to record that one of the general evening discourses was delivered before a large audience by Sir Josiah Stamp, who took as his title "Must Science Ruin Economic Progress?" It must be now many years since an economic subject has been selected for one of these discourses. During recent meetings of the Association much attention has been focussed on this problem of the relation of science to social progress, and the General Committee has now passed a resolution requesting the Council to consider by what means the Association within the framework of its constitution may assist towards a better adjustment between the advance of science and social progress with a view to further discussion at the next meeting. In 1934 the Association will meet in Aberdeen from September 5 to 13. Particulars of the arrangements for Section F can be obtained from the Recorder of the Section—Dr. K. G. Fenelon, College of Technology, Manchester 1—to whom also any offers of papers should be sent.

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We have received, as we go to Press, the volume of *Economic Essays in honour of Gustav Cassel* (pp. 704: 30*s.*), which is published by Messrs. Allen and Unwin. This volume was presented to the eminent economist on the occasion of his retirement in October from the Chair at Stockholm to which he has brought such great distinction, and round which he has seen the growth of a school of Swedish economists worthy to carry on the tradition. We hope in a future number to review this volume, the contributors to which come from all countries. The Scandinavian writers are Akerman, Bagge, Brisman, Frisch, Heckscher, Hilgerdt, Keilhau, Kock, Lindahl, Myrdal, Ohlin, Pedersen, Pipping, Suviranta, and Zeuthen. The Italian contribution comes from Einaudi, Fanno, Fubini, Porri, and del Vecchio. America is represented

by Angell, J. M. Clark, Commons, Douglas, Graham, Hansen, Hollander, Kemmerer, Knight, E. M. Patterson, Seligman, and Snyder. The French writers are Dupriez, Landry, Laufenburger, Lescure, Raffard, and Semiand; the German, Amonn, Helander, Neisser, and Röpke; the Hungarian, Englis and Varga; the British, Stamp, Loveday, Gregory, and Macgregor; the Dutch, Valk and Verrijn Stuart. This symposium, mainly on the new issues of economic theory which have presented themselves since the War, is a fitting tribute to the achievement of Cassel.

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At a meeting of the Society for Cultural Relations between the peoples of Great Britain and the U.S.S.R. (commonly known as the S.C.R.), held in London on October 25th, it was resolved that, in addition to the Education and Science Sections, there should be an Economic Section. The objects of the Section are to further the study of modern Russian economic theory and methods—including such subjects as the preconditions of planning, the structure of industry and methods of industrial control in the Soviet Union, and the financial system, including the price mechanism; to make a survey of current publications on Russian economic theory, conditions and policy; to suggest and arrange for the translation into English of Russian economic writings, and publication in full or summary; and to direct attention to suitable lines of investigation to be undertaken by economists visiting the Soviet Union. A provisional committee was appointed to hold office until February, of which Mr. H. Stanley Jevons is chairman, and Mr. S. Goldman, research scholar at the London School of Economics, is honorary secretary. Six meetings of the Section for the discussion of papers will be held in London during the present season from November to April. The minimum annual subscription to the Society for Cultural Relations is 5*s.*, and to the Economic Section an additional 2*s.* 6*d.* Any person wishing to join the Society, which has a lending library, and the Economic Section should communicate with the Secretary, S.C.R., at 1 Montague Street, London, W.C.1.

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Mr. Aldo Crosara writes as below with reference to the following passage in Professor Robbins's article on the representative firm (Economic Journal, September 1928, p. 387): "The Marshallian conception of a representative firm has always been a somewhat unsubstantial notion. Conceived as an afterthought—so far as I am able to discover it does not figure at all

in the first edition of the *Principles*—it lurks in the obscurer corners of Book V, etc." :—

"In the first edition of *The Principles of Economics*, 1890, Book V, Chapter IV, paragraph 5, p. 413 and following, Marshall seems without doubt to present the conception of the representative firm under the expression 'representative business.' He speaks in this passage of firms effectively managed with ability less or more than normal as of 'eddies in the surface of a great tide,' suggesting that businesses managed with normal ability actually and largely prevail in the total supplies of a commodity. The paragraph itself is headed 'We must select as representative a business which is managed with normal ability; and so as to get its fair share of the economies resulting from industrial organisation'; and the text specifies the economies as being 'those economies of production both in the internal arrangement of the factory and in its external, etc.'"

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THE next Annual Conference of the Association of University Teachers of Economics will be held at Devonshire Hall, Leeds, during the week-end 5th–8th January, 1934. Further particulars will be sent to members of the Association early in December. Any enquiries from intending members should be addressed to the Hon. Secretary (Mr. Stanley Parris, University College, Cardiff).

# RECENT PERIODICALS AND NEW BOOKS

*Journal of the Royal Statistical Society.*

Vol. XCVI, Part IV. *The Causes of Fluctuations of Industrial Activity and the Price-level.* H. S. JEVONS. *The Measurement of Price Changes.* A. W. FLUX.

*Economica.*

AUGUST, 1933. *A Note on the Theory of Money.* D. H. ROBERTSON. *Colonial Administration.* LORD LUGARD. *The Constitutional Importance of the "Commissioners for Wool" of* 1689; Part II. R. M. LEES. *The Definition of the Concept of a "Velocity of Circulation of Goods."* A. W. MARGET. *The Influence of Position in Sibship on Juvenile Delinquency.* M. FORTES.

*Review of Economic Studies.*

Vol. I, No. I. *Pareto and Pure Economics.* U. RICCI. *The Theory of Money and the Analysis of Output.* J. ROBINSON. Argues that Keynes' *Treatise* is not really concerned with monetary theory, but with disequilibrium in real output. *Some Notes on Monetary Theories of the Trade Cycle.* G. L. S. SHACKLE. *The Diagrammatic Representation of Elasticity of Demand.* A. P. LERNER. *Taxation and Returns.* L. M. FRASER. A discussion of the doctrine that to tax increasing cost industries and subsidise decreasing cost ones would increase welfare. *Profit in American Economic Theory.* W. S. HOPKINS. *Notes on Elasticity of Substitution.* P. M. SWEEZY, A. P. LERNER, R. F. KAHN, J. R. HICKS.

*International Labour Review.*

AUGUST, 1933. *The Fall of the Birth-rate and its Effects on Social Policy.* L. HERSCH. *The Development of Unemployment Relief in Germany.* O. WEIGERT. *Disablement Benefit under the British Health Insurance System. International Statistics of Rents in Certain Towns in* 1932.

SEPTEMBER, 1933. *The Development of Unemployment Relief in Germany,* II. O. WEIGERT. *Wage Changes in the U.S.A.,* 1929–33.

OCTOBER, 1933. *Impressions of a Visit to India, Iraq, Persia, and Turkey.* C. W. H. WEAVER. *Landless Agricultural Workers in Hungary.* M. MORICZ. *Recent Social Trends in the United States. Recent Official Inquiries into Wages and Hours of Work in Various Industries in Germany.*

*South African Journal of Economics.*

JUNE, 1933. *The Gold-mining Position.* SIR R. KOTZE. *Die Landboukrediet- en Landbouskuldvraagstuk.* E. H. D. ARNDT. *Some Aspects of the Marketing of Farm Products in South Africa.* E. DAVIS. *Financial Problems of Provincial Government in South Africa.* J. H. BOTHA. *The Transkei Trader.* E. S. HAINES.

SEPTEMBER, 1933. *Vestiging en trek van die Suid-Afrikaanse Naturelle-bevolking onder nuwere Ekonomiese Voorwardes.* J. F. W. GROSSKOPF. *Economic Aspects of the Report of the Poor-whites Commission.* W. H. HUTT. *Some Notes on the Optimum Size of Population.* H. SONNABEND. *The Excess-profits Tax on Gold and some of its Implications.* Sir R. KOTZE. *The Boom in Kaffirs.* C. S. RICHARDS.

*The Economic Record.*

JUNE, 1933. *Factors of the Flow of Money and their Variance.* D. T. SAWKINS. *Bulk Handling.* S. M. WADHAM. *Financial and Economic Policy of the Stevens Government.* F. A. BLAND. *New Zealand Customs Tariff Policy.* E. P. NEALE. *Pioneer Settlement.* G. L. WOOD. *Post-war Unemployment in New Zealand.* J. P. BELSHAW. *Small Holdings for Unemployed in New Zealand.* D. O. WILLIAMS. *The Commonwealth Land Tax.* J. M. GARLAND. *Population Trend in Australia.* H. J. EXLEY. *State Socialism in Victoria.* W. L. RAWS.

*Index* (Stockholm).

AUGUST, 1933. *Double Taxation—a Trade Barrier.* M. S. CARROLL.

SEPTEMBER, 1933. *Swedish Government Loans.* K. HILDEBRAND.

OCTOBER, 1933. *The World's Staples.* XIX. *Artificial Fertilisers.* P. WALLER.

*Skandinaviska Kreditaktiebolaget.*

OCTOBER, 1933. *Present-day Gold Standard Problems.* G. CASSEL. *The Swedish Banks in their Relation to Industry. Sweden's Balance of International Payments,* 1925–32.

*Quarterly Journal of Economics.*

AUGUST, 1933. *The Economic Effects of the Gold Discoveries upon South Africa,* 1886–1910. D. W. GILBERT. *The Unity of Veblen's Theoretical System.* K. L. ANDERSON. *The Demand for Labour.* A. E. MONROE. *Gold Production and the Price Level.* J. T. PHINNEY. *Tax Shifting and the Laws of Cost.* E. D. FAGAN.

*Journal of Political Economy.*

AUGUST, 1933. *Population Doctrines in the United States.* I. *Anti-Malthusianism.* J. J. SPENGLER. *Interrelation of Demand.* H. SCHULTZ. *Open Market Buying as a Stimulant for the Bond Market.* J. C. DOLLEY. *American Industry Abroad since* 1929. F. A. SOUTHARD. *Mercantilism as Liberalism.* H. C. SIMONS.

*Review of Economic Statistics.*

AUGUST, 1933. *Business Cycles and Municipal Expenditures.* D. W. GILBERT. *A New Index of Industrial Production and Trade.* W. M. PERSONS and LE BARON R. FOSTER.

*American Economic Review.*

SEPTEMBER, 1933. *Unemployment Insurance and the Wisconsin Act.* W. A. MURTON. *Congressional Tariff Theory.* F. W. FETTER. *Horse-power Equipment in U.S.* C. S. DAUGHERTY. *Malynes and the Theory of Foreign Exchanges.* E. A. J. JOHNSON. *Regulation of Brokers' Loans.* W. J. EITEMAN. *Foreign Investment and National Gain.* C. R. WHITTLESEY. *The Hungarian Thrift-Crown.* L. L. ECKER.

*Annals of the American Academy of Political and Social Science.*

SEPTEMBER, 1933. *The Crisis of Democracy: a broad survey of the operation of Government in the United States.* Articles by various writers on the meaning of democracy, from the side of Government and of the governed.

*Wheat Studies of the Food Research Institute.*

SEPTEMBER, 1933. *Survey of the Wheat Situation, April to August,* 1933. A tremendous wave of speculative enthusiasm more than doubled the price of wheat futures at Chicago between April and July 17. A steep decline followed and by early September the gold-price of wheat had fallen almost to the level of early April. Favourable new crop prospects in Europe and the pressure of huge world stocks of old crop wheat—the highest on record—were dominant factors in restraining the advance and forcing the decline.

OCTOBER. *British Preference for Empire Wheat.* Experience during the first season warrants the conclusion that a preference of 2*s.* per quarter will by no means reserve the British market for Empire wheats. Canada and Australia have not been given an effective preference over Argentina and Russia, which would require a much higher rate of duty.

*Révue d'Économie Politique.*

MAY, 1933. *La France Économique; Annuare pour* 1932. (Finance, production, commerce, transport, and social questions; by various authors.)

JULY, 1933. *Les nouvelles théories économiques de la monnaie.* G. DEL VECCHIO. *Société d'économie mixte et système capitaliste.* FRANÇOIS-PERROUX. *Sur la reversibilité des équilibres économiques.* G. H. BOUSQUET.

*Bulletin de l'Institut des Sciences Économiques.*

AUGUST, 1933. *Les indices de la conjoncture économique du Congo belge depuis la guerre.* G. EYSKENS. *L'évolution économique de la Belgique en période de baisse fondamentale des prix* (1871–96). *Le marché belge des obligations de* 1897 *à* 1913. P. ROUSSEAUX. *Le taux de capitalisation des valeurs à revenu variable.* M. MASOIN. *La conjoncture économique de la Belgique et du Luxembourg.* L. H. DUPRIEZ.

*Révue de l'Institut de Sociologie.*

JULY, 1933. *L'art et le machinisme.* J. LAMEERE. *De la garantie des libertés publiques.* H. DE HOON. *La prévision dans la science.* W. M. KOZLOWSKI.

*Schmollers Jahrbuch.*

AUGUST, 1933. *Der Weg zum neuen Reich.* H. FEDDERSEN. *Schöpferische Entwicklung in Natur und Geschichte.* F. KERN. *Nationale Selbstgenugsamkeit.* J. M. KEYNES. *Die Grundprobleme der Nationalökonomie.* K. BODE. *Neueres Schriftum zur Bevölkerungsfrage.* K. OLDENBERG. *Lage und Aussichten der deutschen Landwirtschaft.* P. QUANTE.

*Weltwirtschaftliches Archiv.*

OCTOBER, 1933. *Die Weltkonferenz in London*, 1933. J. COATMAN. Describes the features of world conditions which preceded the Conference, outlines its proceedings, and suggests that it has thrown light on the real bases of the economic nationalism of to-day. *Die Tendenz zur Nationalwirtschaft und die internationalen Beziehungen.* L. BROCARD. A return to free trade being at present out of the question, the author discusses an international arrangement and regulation of Protection. *Ökonomische Theorie, Nationalwirtschaft und Internationalismus.* H. KRETSCHMAR. An argument for a new conception of the function of the State, on the basis of a new direction of theory. *Die Weltwirtschaftskrisis des Jahres* 1857. H. WÄTJEN. The author is concerned mainly with conditions in America, and throws some light on their consequences in Europe. *Die zoll- und handelspolitischen Auswirkungen der Weltwirtschaftskrisis von* 1857–59. H. ROSENBERG. An argument on similar lines to the preceding, arising mainly out of the tariff policy of America and Canada. *Ägypten in der Weltwirtschaftskrisis.* C. BRESCIANI-TURRONI. The diminution in the international demand for Egyptian cotton has resulted in a worsening of the terms of trade for Egypt, owing to the inelasticity of the supply. Attempts are being made to make supply more elastic by substitution of other articles for cotton. *The Position of the Native Population in the Economic System of South Africa.* J. F. W. GROSSKOPF. *Die äussere Wirtschaftspolitik Australiens.* F. R. E. MAULDON. Examines the protectionist policy of Australia, as well as the non-fiscal methods of fostering export trade, as these unite with public borrowing for development, monetary policy, and immigration policy, to constitute external economic policy as a whole. *Russlands Getreideausfuhr.* B. BRUTZKUS. The socialisation of the land economy has made it possible to increase the assessments of grain and create a considerable export, but at the cost of want on the plains. The conditions of a sound export of grain do not at present exist in the U.S.S.R. *Wirtschaftsstruktur und Wirtschaftsbeziehungen Albaniens.* H. GROSS.

*Zeitschrift für Nationalökonomie.*

JUNE, 1933. *Gleichgewicht und Konjunktur.* J. R. HICKS. The aim of this essay is to examine the rôle of the concept of equilibrium in the theory of money and the trade cycle. The Lausanne equilibrium can be extended to take account of the time-factor and changes of data. But the use of money is inconsistent with perfect foresight, and monetary theory must be investigated in close conjunction with the theory of risk. Trade cycles arise from imperfect foresight and the use of money. *Zwei kritische Bemerkungen zur Preistheorie Gustav Cassels.* R. V. STACKELBERG. Cassel's attitude to the subjective theory of value is examined and it is shown that with variable technical coefficients the Principle of Substitution is not merely a supplementary principle. *Ricardo und die Entwicklung des Bullion-Report,* I. E. FOSSATI. Many of Ricardo's ideas in the *High Price of Bullion* are to be found in the works of Boyd, Thornton, Wheatley and King. *Die Kapitalzins theorie Böhm-Bawerks.* J. K. LINDBERG.

Böhm-Bawerk is criticised for neglecting the possibility of an extension of the period of production by the capitalists in order to increase profits and lower wages. Wicksell held that this could only occur with a combination of capitalists, but the author thinks his supposition unnecessary. *Theoretische und Statistische Kostkurve.* A. R. SWEEZY.

*Zeitschrift für die gesamte Staatswissenschaft.*

SEPTEMBER, 1933. *Rentenprincip und Grundrente.* A. VON NAVRATIL. *Zum Ausbau der Hochschulstatistik.* P. FLASKÄMPER. *Grundfragen und Erfahrungstatsachen der Devisenbewirtschaftung.* R. KERSCHAGL.

*Vierteljahrshefte zur Konjunkturforschung.*

SONDERHEFT 34. *Die Wettbewerbe der Steinkohle.* R. REGUL.

*Jahrbücher für Nationalokonomie und Statistik.*

AUGUST, 1933. *Mathematische Beziehung zwischen Gütermenge und Preis.* J. BAXA. *Die wirtschaftliche Ansichten von Joseph v. Radowitz.*

SEPTEMBER, 1933. *Das Aufkommen des landwirtschaftlichen Maschinen um die Wende des* 18 *und in der ersten Hälfte des* 19 *Jahrhunderts.* A. ELSTER.

OCTOBER, 1933. *Der Sinn des Aussenhandels und die Handelsstatistik.* J. JASTROW.

*Kyoto University Economic Review.*

JULY, 1933. *Progressive Taxation on the Incomes of Corporations.* M. KAMBE. *Forced Loans in the Meiji Restoration.* E. HONJO. *Survey of the Distribution of the People's Incomes in the light of the Household Rate.* S. SHIOMI. *Effects of the Operation of the Rice Law.* Y. YAGI. *On Output-curtailing in Modern Industry.* I. OTSUKA. *Marx's Analysis of Capitalism and the General Equilibrium Theory of the Lausanne School.* K. SHIBATA.

*Giornale degli Economisti.*

APRIL, 1932.[1] *Può una curva di domanda esser crescente?* PROFESSOR U. RICCI takes up again a problem which he had discussed in the *Giornale* of August, 1904. He concludes that he was then justified in contending that in certain circumstances the utility curve of a commodity might be inclined positively in its early stages, but he modifies his former reasoning with regard to the possibility of a rising demand curve. Discussing the theory of demand within the framework of the Walrasian system of general equilibrium, he holds that "the curve of increasing demand is simply a succession of points, each of which represents an unstable equilibrium," and that therefore the true, economically valid curve of demand must always slope downwards. *Bilancie dei pagamenti internazionali e riserve auree.* V. PORRI. *La soppressione delle riparazioni e la bilancia dei debiti e dei crediti della Germania.* A. BREGLIA. A convenient summary of the statistics of Germany's balance of trade for the years 1924 to 1931, with special reference to reparation payments and the import of

[1] These summaries of earlier issues, omitted at the time, are here inserted for purposes of record.

capital from foreign countries. Even after the suppression of the payment of reparations Germany will be compelled to export on a vast scale in order to make interest payments on her external debt, with consequences which will continue to embarrass other countries with large exporting industries. *Ancora sulla realtà dell' "homo oeconomicus."* A. CONTENTO.

MAY, 1932.[1] *Contributo alla determinazione del concetto di imposta generale sul reddito.* R. FUBINI. In the first of two articles dealing with the nature and effects of a general tax on income, the writer concludes that a general tax on income must fulfil three conditions: first, there must be a rational system of deductions from gross income to allow for amortisation of capital and insurance against risk; secondly, a general tax on income must always be proportional to the total net income—*i.e.* levied at a constant rate; thirdly, the tax must be "real" and not personal in character. *Le grandi scoperti: la teoria del protezionismo.* E. CORBINO. A very vigorous destructive criticism of a book recently published by Professor Manoilesco purporting to set out a new constructive theory of protection. *Diritto tributario e diritto finanziario.* A. CUTRERA.

JUNE, 1933. *Appunti economici sulla riduzione delle ore di lavoro.* L. LENTI. A discussion of the economic effects of a general reduction in the hours of work. *I contratti di compartecipazione in agricoltura.* M. TOFANI. *La dinamica della popolazione secondo Francesco Ferrara.* C. ARENA.

JULY, 1933. *Ricerche sulle fluttuazioni economiche di lunga durata.* J. G. KRETSCHMANN. A survey of price movements (based on wheat) during the seventeenth and eighteenth centuries in England and France shows that there is no evidence of any regular or cyclical fluctuations in prices in these centuries. The writer disputes the opposite conclusions of Jevons, Kondratieff, Kuznets and Beveridge. *La clausola della nazione più favorita in alcune vicende storiche dei trattati di commercio italiani.* G. BASSANI.

AUGUST, 1933. *L'offerta individuale di lavoro e le sue limitazioni.* G. DEMARIA. A treatment on mathematical lines of the conditions determining the individual worker's supply of labour, with special reference to a recent work by Professor Ragnar Frish entitled *The Measurement of Marginal Utility. In tema di curve di domanda.* B. FOÀ. It is contended, in answer to certain objections put forward by Dr. Dominedò in the *Giornale* for January 1933, that the Marshallian demand curve, no less than the supply curve, is logically related to a period of time rather than to an instantaneous moment of time. It is further argued that Marshall's assumption of the invariability of the marginal utility of money is not essential, and that there would be advantages in relating the individual's expenditure to his income.

*La Riforma Sociale.*

MAY–JUNE, 1932.[1] *Un fattore fondamentale delle fluttuazioni economiche.* PROFESSOR G. U. PAPI suggests that the trade cycle may be defined as "the development of a series of errors in the

[1] These summaries of earlier issues, omitted at the time, are here inserted for purposes of record.

supply of the product, at first taking the form of scarcity and subsequently of excess, set in motion by a favourable change in productive technique." Such errors give rise to important discrepancies between the costs and receipts of the business community and so produce fluctuations which would occur even in the absence of any element of monetary or credit instability. *Il costo della burocrazia dello Stato.* F. A. RÉPACI. *Piani.* PROFESSOR L. EINAUDI seeks to damp the ardour of the protagonists of a "planned" economy, by pointing out some of the many difficulties and dangers likely to be encountered. *È possibile la riduzione autonoma della tariffa doganale?* G. CARANO-DONVITO. A criticism of the proposition that the reduction of the tariffs of a country should necessarily be conditional on and subordinate to a reduction in the tariff duties of other countries with which it has commercial relations.

JULY–AUGUST, 1933. *Sul moto ciclico.* A. BREGLIA. A discussion of the part played by loans at a fixed rate of interest, or repayable in a fixed sum of money, in increasing the violence of cyclical fluctuations. *Del "Brain Trust" e di altri guai della crisi.* PROFESSOR A. CABIATI castigates those responsible for the present economic and monetary policy of the United States on the ground of their ignorance of fundamental economic truths. *Nuovi vagabondaggi intorno alla crisi.* PROFESSOR L. EINAUDI continues his interesting and instructive commentary upon the causes and characteristics of the world crisis. *Gli indici dei prezzi di borsa in Italia.* L. LENTI.

*De Economist.*

FEBRUARY, 1933. *Pachtwetgeving: Kort overzicht van eenige moderne wijzigingen in de Pachtwetgeving van verschillende Europeesche landen.* I. J. P. VAN AARTSEN. A discussion of the landlord and tenant system in Europe. The tenant system is of greater importance in Holland than elsewhere; after Great Britain, Holland shows proportionately the largest number of tenants. In England and Scotland this is the result of inalienable possession of land by the nobility; in Holland, since the fifteenth century, rich merchants have turned to the possession of land. The advantages of the landlord-and-tenant system are discussed: in bad times such a system gives greater elasticity; it also gives an opening to competent cultivators who could not afford to buy their own land. On the whole, the landlord-and-tenant system is preferable to possession. In many respects it represents a very happy relationship between those in possession of capital who do not, and less fortunately placed people who do, command labour-power and skill. On broad lines the influence of Roman Law is discussed. The social importance to the nation of prosperous peasants and tenants is a factor in modifying the contract in a direction favourable to the tenant. Certain respects in which safeguards have been necessary are indicated, *e.g.* the question of renewing a lease, the problem of improvements, unforeseen circumstances ("acts of God"), and fixity of rent. The present instalment further contains a fairly detailed history of the land question in Ireland, Scotland and in England and Wales; it also deals with Finland and the Baltic States. *Beheersching der Conjunctuur.* I. I. CRANSBERG. Suggests that

Ricardo's denial of the possibility of a general glut is of more importance for the construction of a Conjunctur-theory than many modern contributions to the subject. The article is concerned with the "Law of the Cost of Production" and the Quantity Theory; also with the creation of money by the commercial banks, and the reaction of this on prices. The concluding section of this instalment discusses the long period rise and fall of prices in the nineteenth century. *Winstdeeling en Bedrijfsmedebezit.* M. C. M. DE GROOT. An answer to the seven points of criticism brought by Professor Bordewijk against profit-sharing schemes.

MARCH, 1933. *Om de toerekeningsleer.* E. C. VAN DORP. A general review of the two works of Dr. W. L. Valk: "The Theoretical-Economic System of Gustav Cassel" and "The Principles of Wages." *Pachtwetgeving, etc.* II. J. P. VAN AARTSEN. This further instalment discusses legislation with regard to land tenure under "Changes in the Code Civil" (France, Belgium, Spain, Italy), and also gives an account of the position in Germany. *Beheersching der Conjunctuur.* II. I. CRANSBERG. This instalment deals with the short-period waves (the cycle); and in particular with the crisis of 1929.

APRIL, 1933. *Coördinatie van het Verkeerswezen.* F. DE VRIES. There is a double crisis in the transport industry, due to (i) the general malaise of a fall in prices; and (ii) the rapid development of the means of transport. The question arises what policy should be adopted. It is not permissible to argue that it should be left to competition, since competition in the sense proposed does not in fact exist in transport, and, moreover, competition elsewhere has not settled such questions. Transport indeed has never been uncontrolled. The revolutionary nature of the changes in transport a century ago made it impossible for authority to stand aside. Railways were not put on the same footing as other industries, but were made serviceable to the furtherance of the general good. Examples of such control are given (*e.g.* freight charges); so also other burdens were placed on the Railways (*e.g.* conveyance of mails). At the same time, they were expected to meet their expenses out of their revenue. Everywhere, sooner or later, co-ordination has taken the place of competition. In the present century a new competition has sprung up with canals, motor transport and aircraft. Restrictions, however, remain imposed on railways only. There is need for consideration of a general policy. The principles which should serve as foundation for transport policy are (i) regard for the general interest; and (ii) costs should be covered by revenue. Costs of transport are part of the costs of production, and there is no reason why this particular item in the cost of production should be treated differently from any other. Other general questions of transport policy are discussed. The new competition is not competition on a basis of equality. The result of the present position is surplus of transport capacity, waste of capital, etc. Conditions of competition must be equalised, but there must be no attempt to protect the old against the new, nor consideration of vested interests. The principles outlined are applied to the case of motor-transport, canals, and to the problem of regulation of competition. *Pachtevetgeving, etc.* III. J. P. VAN AARTSEN.

Continues the account of the legal position with regard to land tenure in Austria, Czecho-Slovakia, Switzerland and Sweden. The article concludes with recommendations for changes in the Law in Holland. The matters dealt with are: compensation for improvements, security of tenure and remission of rent in certain cases. *Beheersching der Conjunctuur.* III. I. CRANSBERG. In this concluding section the author discusses the question of control both for the long waves and for the cycle. Four conditions are enumerated: (i) in considering control it is necessary to distinguish long and short waves, as their characteristics and causes are different; (ii) proposals must embrace the whole capitalistic sphere of the economic life of the world; (iii) there should be no breach with gold as the international method of calculation; (iv) regulation should as far as possible fit in with existing laws relating to banking. Proposals are discussed under the two headings of the long and the short period.

MAY, 1933. *Over den vermogentoestand des lands en de noodzakelijkheid van universeel schuld-vermindering.* EMILE VERVIERS. This article contains the substance of an address directed to the Queen of Holland on 24th October, 1932, "writen in the apparently idle hope of convincing the responsible authorities of the serious economic condition of the land." It is primarily devoted to underlining the extent of the indebtedness of the country. It is estimated that the indebtedness is 136 per cent. of the national resources; the average wealth is 75 per cent. of what it was in 1913, and it is prophesied that the level of welfare will sink to a half of the 1913 level. The two factors in prolonging the depression are (i) indebtedness and (ii) wages. Four methods of dealing with the pressure of debts are discussed at considerable length. Three of these, for various reasons, are regarded as ineffective, impracticable or inadequate. They are: (i) raising the price level; (ii) depreciation of the currency; (iii) application of the Dutch law of bankruptcy. The fourth and only possible way is by special emergency legislation. The proposal put forward is that all debts in existence on 31st December, 1929, and all debts contracted in 1930 and 1931 should be automatically reduced by a certain percentage (4 per cent. is suggested) on the last day of each year for a limited number of years. The consequences of this proposal are discussed. The article is supported by an extensive series of explanatory notes. *Kapitaal en Arbeid in de Vereenigde Staten.* B. LANDHEER. A general review of the relations between Capital and Labour in the United States of America. Employers lay increasing emphasis on the care of the workers, partly in a desire to prevent the rise of Trade Unions. Various methods of interesting the workers in the firm are indicated. The State plays only a small part in industrial and social relations. Tendencies are illustrated by a more detailed discussion of the Western Electric Company, Hawthorne, Chicago.

### *Ekonomisk Tidskrift.*

1933, No. 2. *On the Problem of the Exposition of Monetary Theory.* BERTIL OHLIN. The author attempts to construct a simple and more practical apparatus than that of neo-Wicksellian theory. It is necessary to clarify the ambiguities in current definitions of

income, saving, and investment before we can apply statistical data. The description given by Wicksell, Lindahl and Hayek of the cumulative process is based on the assumption of a spontaneous lowering of the rate of interest and of the stickiness of wages and the demand for consumption-goods; but a rise in prices need not necessarily involve an increase in the demand for and relative price of production-goods. The relevance of the Austrian theory of capital and of the time-structure of prices to monetary theory is stressed, for the exchange structure and time-sequence of prices is at the core of monetary problems. Finally, the neo-Wicksellian account of the equilibrium rate of interest and price-formation is stated to be static and inadequate.

No. 3. *The Swedish Riksbank's Consumption Price-Index.* ERIK LINDAHL. Since September 1931 the official Swedish policy has been to keep the kroner's internal purchasing power more or less stable. The article describes in detail the statistical material used by the Riksbank for compiling its price-level of consumption goods and services and of the deviations from stability permitted, and discusses the price developments of 1931–2 with particular reference to the influence of the depreciation of the kroner on Swedish retail prices.

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## NEW BOOKS

### *British.*

ABBATI (A. H.). The Search for Confidence in 1932. Unclaimed Wealth Utilisation Committee, Geneva. London: P. S. King. Pp. 109. 6*s*.

AKERMAN (J.) and others. Economic Essays in honour of Gustav Cassel. Allen and Unwin. Pp. 720. 30*s*.

BAKER (A.). The Control of Prices: an outline of prosperity. J. M. Dent. 7¼″. Pp. 175. 5*s*.

BENN (SIR E. J. P.). This Soft Age, with the Optimistic Theory of the 30–50 man. Ernest Benn. 8½″. Pp. 182. 3*s*. 6*d*.

BROOKS (C.). The Economics of Human Happiness. Routledge. 8½″. Pp. 311. 10*s*. 6*d*.

BROWN (M.). Prosperity: the New Socialism. P. S. King. 7½″. Pp. 64. 2*s*. 6*d*.

Canadian Political Science Association. Papers and Proceedings of the Fifth Annual Meeting, Ottawa, Ontario, May 1933. Toronto University: Prof. V. W. Bladen. 10″. Pp. 259.

CLARK (C.). The Control of Investment. New Fabian Research Bureau. Gollancz. Pp. 33. 6*d*.

COLE (G. D. H.) (Ed.). What Everybody Wants to Know About Money. Gollancz. Pp. 544. 5*s*.

COLE (G. D. H.) and MELLOR (W.). Workers' Control and Self-government in Industry. New Fabian Research Bureau. Gollancz. Pp. 19. 6*d*.

COPLAND (D. B.) and WELLER (G. A.). The Australian Economy: Simple Economic Studies. 3rd ed. Sydney: Angus and Robertson (London: Australian Book Co.). 7¼″. Pp. 171. 4*s.* 6*d.*

EDGEWORTH (K. E.). The Industrial Crisis. Allen and Unwin. Pp. 207. 5*s.*

FLORENCE (P. S.). The Logic of Industrial Organisation. Kegan Paul. 8½″. Pp. 280. 10*s.* 6*d.*

GHOSH (P. C.). The Theory of Profits. Calcutta University. 8½″. Pp. 442.

HADER (J. J.) and LINDEMAN (E. C.). Dynamic Social Research. Kegan Paul. 8½″. Pp. 231. 12*s.* 6*d.*

HAMMOND (J. L.). The Growth of Common Enjoyment. (Hobhouse Memorial Lectures, No. 3.) Clarendon Press. Pp. 30. 2*s.*

HAUSLEITER (L.). The Machine Unchained. Routledge. 8½″. Pp. 336. 12*s.* 6*d.*

INNIS (H. A.) and LOWER (A. R. M.). Select Documents in Canadian Economic History, 1783–1885. University of Toronto Press (London: Humphrey Milford). 9″. Pp. 846. 21*s.*

KINLOCH (T. F.). Six English Economists. 2nd ed. Gee & Co. 7¼″. Pp. 98. 5*s.*

KIRK (J. H.). Agriculture and the Trade Cycle, their mutual relations, with special reference to the period 1926–31. P. S. King. 8½″. Pp. 272. 12*s.*

LÓPEZ (A.). The World Economic Depression: its inner meaning and cure. Published by the Author, Sicilian House, W.C. 1. 8½″. Pp. 78.

MEADE (J. E.). Public Works in their International Aspect. New Fabian Research Bureau. Gollancz. Pp. 41. 6*d.*

MEADE (J. E.). The Rate of Interest in a Progressive State. Macmillan. 8¾″. Pp. 115. 7*s.* 6*d.*

MONEY (SIR LEO C.). Product Money: a sequel to *Riches and Poverty*. Methuen. 7½″. Pp. 172. 5*s.*

MYRDAL (G.). The Cost of Living in Sweden, 1830–1930. P. S. King. 8½″. Pp. 251.

NEWBOLD (W.). Democracy, Debts and Disarmament. Methuen. 7½″. Pp. 343. 8*s.* 6*d.*

New Survey of London Life and Labour. Vol. V. II. London Industries, II. P. S. King. 8½″. Pp. xii + 435. 17*s.* 6*d.*

ORWIN (C. S.). Financing the Farmer: a scheme to provide short-term credit for agriculture. Clarendon Press. 8½″. Pp. 27. 1*s.*

PAPI (G. U.). Escape from Stagnation: an Essay on business fluctuations. P. S. King. Pp. 165. 5*s.*

PORTUS (G. V.). Studies in the Australian Constitution. Sydney: Angus and Robertson (London: Australian Book Co.). 7½″. Pp. 233. 5*s.*

REES (J. F.). A Survey of Economic Development; with special reference to Great Britain. Pitman. 8½″. Pp. 330. 7*s.* 6*d.*

RHODES (E. C.). Elementary Statistical Methods. Routledge. Pp. 243. 7*s.* 6*d.*

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